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Vol. XLVI DECEMBER, 1934 No. 4

THE WILSON BULLETIN

A Magazine of Field Ornithology

Published by the
WILSON ORNITHOLOGICAL CLUB
at
SIOUX CITY, IOWA

Entered as Second-class Mail Matter, July 13, 1916, at the Postoffice at Sioux City, Iowa, under Act of March 3, 1879.

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Published quarterly, in March, June, September, and December, as the official organ of the Wilson Ornithological Club, at Sioux City, Iowa.

The current issue of the Wilson Bulletin is printed by the Verstegen Printing Company, Sioux City, Iowa.

The Wilson Bulletin is sent to all members not in arrears for dues. The subscription price is $1.50 a year, invariably in advance, in the United States. Outside of the United States the subscription rate is $1.75. New subscriptions, changes of address, and applications for membership should be addressed to the Secretary.

All articles and communications for publication, books and publications for notice, and exchanges, should be addressed to the Editor.

Claims for lost and undelivered copies of the magazine may be addressed to the Editor.

THE WILSON ORNITHOLOGICAL CLUB

Founded December 8, 1888. Named after Alexander Wilson, the first American ornithologist, and called the "Father of American Ornithology".

The officers for the current year are:

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The membership dues are—Sustaining membership, $5.00; active membership, $2.50; associate membership, $1.50 per year.

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A QUARTERLY MAGAZINE OF ORNITHOLOGY
Published by the Wilson Ornithological Club

Vol. XLVI DECEMBER, 1934 No. 4

Vol. XLI (New Series) Whole Number 170

REMINISCENCES OF THE IOWA ORNITHOLOGICAL ASSOCIATION*

BY CARL FRITZ HENNING

With the awakening of spring there comes to us a strange feeling of unrest—it fills our breast with yearnings and delight—it is the hour of dreams and visions.

Already traces of that soft haze which is the glory of the spring sky have appeared, and the sunbeams are falling with a brighter and more invigorating glow—the wind reaches forth with a more delicate touch, and the element of harshness seems to be disappearing from its voice. The Cardinals are calling, and the sweet voices of the returning birds will soon be heard in fields and woods. What a wonderful setting for the coming together of the nature lovers and ornithologists of Iowa.

Pleasant memories awaken in our heart as we stand today on the threshold of Spring—here we have assembled to become better acquainted with one another, to talk about the birds and wild flowers, to plan and lay the foundation for a closer union of the ornithologists of our state, that we may carry on the work of the old Iowa Ornithological Association, whose sun set in glowing splendor a quarter of a century ago.

"A wonderful stream is the River Time
As it blends with the ocean of years."

Looking back we see a little band of impassioned nature students, men who loved the great out-doors, forming the old association for the purpose of becoming better acquainted with the birds of their own state.

Almost thirty years have come and gone since the first seed was sown by these pioneers—they knew that something must be done to create a sentiment for the protection of our vanishing birds. The Passenger Pigeons had made their last flight; the Wild Turkey was

*This paper was read, in the absence of the author, at the organization meeting of the Iowa Ornithologists' Union, at Ames, Iowa, February 28, 1923.

disappearing from his old haunts; the Ruffed Grouse could still be found in the heavy timber, but in ever lessening numbers; and the weird booming of the Pinnated Grouse was heard on the prairies. The Sandhill Cranes circled over our cities in inspiring flights, but every spring thousands of water-fowl were killed as they passed through Iowa on their way to the breeding grounds in the far north—slaughtered on their wedding day. The Quail, our pretty Bob-white of the fields and woods, was threatened with extinction. It was, therefore, apparent that something must be done to protect the birds of Iowa—the time to act had come.

On the 15th day of June, 1894, the Iowa Ornithological Association was organized. The names of the founders of the Association are endeared to the heart of every nature lover in Iowa. Their names and former addresses are:

Rudolph M. Anderson, Forest City; Carleton R. Ball, Ames; Paul Bartsch, Burlington; Wm. A. Bryan, New Sharon; John V. Crone, Marathon; H. J. Giddings, Sabula; A. P. Godley, LeGrand; Ernest Irons, Council Bluffs; Chas. R. Keyes, Mt. Vernon; J. Eugene Law, Perry; W. W. Loomis, Clermont; Wilmon Newell, Ames; F. G. Richardson, Mason City; Walter G. Savage, Hillsboro; David L. Savage, Salem; W. W. Searles, Lime Springs; Fred R. Stearns, Sac City; Chas. C. Tryon, Avoca; E. B. Webster, Cresco; Paul C. Woods, Fayette.

The *Iowa Ornithologist* was the official organ of the Iowa Ornithological Association—a splendid little quarterly magazine, filled with the song and sunshine of the birds of Iowa, and the only magazine at that time, devoted to ornithology and oölogy, in the Mississippi Valley. Perhaps some of the ornithologists assembled here today remember the "Iowa Ornithologist"; it was not a large magazine—usually about twenty-four pages—but it always found a warm spot in the heart of the Iowa nature lovers.

By request of President Irons, David L. Savage of Salem, Iowa, accepted the Editorship of the *Iowa Ornithologist*. In closing his address of acceptance Mr. Savage said, "It is my desire (and I will do all in my power), that the *Iowa Ornithologist* may be a Magazine that will promote a true knowledge of the Wonders of Nature, and awaken in the hearts and minds of all its readers a truer love and deeper interest in the study of Nature, enabling them to 'look through Nature up to Nature's God'."

The work of the Iowa Ornithological Association was done entirely through correspondence. With the beginning of every quarter, certain work was taken up for special study. For instance during the

first three months of the Association's existence Notes and Observations were taken on the family *Fringillidae* (Finches and Sparrows) and *Mniotiltidae* (Wood Warblers). For the second quarter the families *Icteridae*, *Tyrannidae*, and *Alaudidae* were taken up for special study—and so on throughout the year. The work done in this line was very commendable.

In the year 1895 the Iowa Ornithological Association held its first election of officers. Of the thirty-six members entitled to vote, only sixteen sent in their ballots, with the following results:

Charles R. Keyes, President; Rudolph M. Anderson, Vice-President; J. Eugene Law, Secretary; David L. Savage, Editor-Treasurer.

The First Annual Congress of the Iowa Ornithological Association was held at Iowa City, August 22-23, 1895, in the Zoological Lecture Room of the Science Building. The business meeting was called to order by the President, Charles R. Keyes, of Mt. Vernon. Nine active members were present. After an interesting address by the President, letters from absent members, Paul Bartsch, A. I. Johnson, and Carl Fritz Henning were read, the two former enclosing papers.

The Treasurer's report from organization to August 22, 1895, was read. The Secretary's report having been published in the *Iowa Ornithologist*, was omitted. Discussions followed, and various resolutions were adopted. The yearly dues were raised from fifty cents to one dollar for active members. An invitation was received and accepted from the Curator of the State Historical Society asking the members of the Iowa Ornithological Association to view the collection of that society. At the public session, Prof. Schaeffer, President of the State University, delivered the address of welcome, to which President Charles R. Keyes responded. The following interesting papers were read: "Protection of Our Birds", by W. W. Loomis. "Warblers of Iowa", by Morton E. Peck. Mr. Peck mentioned thirty-six warblers in Iowa. This paper was followed by a discussion of the warblers, which closed the evening program.

At the second session, August 23, a paper on the "American Duck Hawk" was read by Geo. H. Burge. Other interesting papers were read as follows: "Birds Extinct in Iowa", by Paul Bartsch. (In the absence of the author it was read by J. H. Brown). "Relation of the American Crow to Economics", by Hiram Heaton. "Bird Laws of Iowa and Laws that Are Needed", by J. H. Brown. "Prairie Hen", by A. I. Johnson. (In the absence of the author it was read by President Keyes). "Sea Birds that Visit Iowa", by F. H. Shoemaker. "Ruffed

Grouse", by D. L. Savage. Mr. Savage also exhibited a fine life-size and color portrait of his subject. It was drawn by Wm. Savage.

After extending a vote of thanks to the authorities of the State University of Iowa, and particularly to Prof. Schaeffer for the use of their rooms, the meeting adjourned. Thus ended the First Annual Congress of the Iowa Ornithological Association, with the understanding that they would again come together at Mount Vernon in 1896.

The Second Annual Meeting of the Iowa Ornithological Association was held at Mount Vernon, Iowa, July 29-31, 1896. The Secretary's report gave the membership of the Association as 71; constituted as follows: Active, 50; Honorary, 3; Associate, 18. The honorary members of the Association were chosen for their eminence in ornithology. Any person residing outside of the State of Iowa could become an associate member after having been elected.

The Third Annual Congress of the Iowa Ornithological Association was called to convene in the Congregational Church at Manchester, Iowa. The faithful work of the ornithologists of Iowa was beginning to bear fruit. With the beginning of the year 1897 plans were formulated for extending the Association's field of activities.

Paul Bartsch was appointed Chief, Department Seasonal Variations; Carl Fritz Henning, Chief, Department Migration; J. H. Brown, Chief, Department Nidology; Wilmon Newall, Chief, Department Economic Study; and Mrs. M. A. Triem and David L. Savage, Association Lecturers.

Iowa has always been an ideal field for studying the migration of birds. Lying within the embrace of the Mississippi and Missouri Rivers, our state forms a part of the greatest migration pathway in all the world. In the winter of 1881-82 Prof. W. W. Cooke made an attempt to secure the assistance of the ornithologists of Iowa in studying the migration of birds, but a change of residence on the part of Mr. Cooke from Iowa to Minnesota, made it necessary to modify the original scheme, and it was decided to increase the area to be investigated to the whole Mississippi Valley, the admirable report, "Bird Migration in the Mississippi Valley", published by the U. S. Department of Agriculture, being the outcome of this coöperation.

The U. S. Department of Agriculture (Biological Survey), under the kindly influence of Dr. C. Hart Merriam, assisted the Iowa Ornithological Association in the systematic migration work by furnishing several hundred schedules and franked envelopes so that the notes could be made out in duplicate, and a copy forwarded to the Biological Survey free. In the eastern part of the state special attention was

given to the southern species which follow up the river bottoms, for the purpose of ascertaining definitely how far north these birds migrate, and particularly where they breed.

Every member of the Iowa Ornithological Association was putting his shoulder to the wheel, and the aid of every observing ornithologist in the state and adjoining states was solicited. The Association's method of work was the same as Prof. W. W. Cooke used in preparing his work. The work accomplished during 1897 was the most important and interesting in the life of the Association. It included many well written articles on the birds of Iowa, and best of all a real start had been made to solve some of the problems that confronted the student making observations on the movements of birds during those early days.

The Association's work for 1898 was planned along the same lines as the previous year. Arrangements were made for bringing before the people of Iowa, especially the children, the Iowa Ornithological Association Lectures on Ornithology. The plan was to present these lectures to high schools throughout the state, and also before farmers' alliances. The lectures were to be illustrated by a series of magic lantern views showing our native birds and various phases of their life history.

The future of the Iowa Ornithological Association apparently was secure. A few new members were added to the list now and then, and the old wheel-horses were beginning to feel that the Association had weathered the storm that often threatened to cast her upon financial rocks. The prospects were indeed bright for a successful career—but what a change an hour can make! On the 16th of February the U. S. Battleship "Maine" was blown up in Havana Harbor. Rumors of war between the United States and Spain were flashed over the wires—at 4:30 on the afternoon of the same day President McKinley said, "Spain has struck her first blow and war will follow."

Four days later the Twelfth U. S. Infantry, under command of Col. Andrews, passed through my home town, Boone, on their way to the front. The railway station was crowded with excited people, and little boys marched up and down the streets, the soldier boys of the future. As the train pulled out, at the sound of the bugle, the regimental band played the "Star Spangled Banner"—the Stars and Stripes waving proudly in the breeze in union with the Cuban flag.

Naturally through the excitement of war, the systematic work of the Association was neglected. All were thinking of the boys at the front. Some of the members of the Iowa Ornithological Association

were called to the colors, and by the end of the year the Association members were scattered throughout the land. The few remaining members of the Association struggled on to have the *Iowa Ornithologist* published on time. Several issues were published by Hodson Brothers of the Ames Intelligence Office. An effort was made through the influence of Senator C. J. A. Ericson to have the state publish our reports.

In February, 1900, Charles C. Tryon, one of the founders of the Iowa Ornithological Association, published the *Western Ornithologist* as a private enterprise, and the Association's reports on the bird life of Iowa were published therein. The *Western Ornithologist* was a splendid little magazine—a continuation of the *Iowa Ornithologist* in an enlarged and improved form, broadened in scope from the state of Iowa to the entire world. Along in the summer Mr. Tryon accepted a position in the U. S. Army, and was soon thereafter transfered to foreign service, either Cuba or the Philippines.

Finally the members of the Iowa Ornithological Association disbanded, but many of them won renown in various fields of research. We are all familiar with Rudolph M. Anderson's great work in the polar regions, where he in company with Stefansson discovered the "White Eskimo". A true naturalist has the spirit of genius born within him, and no amount of discouragement or misfortune, or of opposition will deter him in the fulfillment of his destiny.

In looking back through the years of time, to the days when the little band of nature lovers worked so faithfully for the welfare of the birds of Iowa, I realize more than ever that after all the *Iowa Ornithologist*, the little quarterly magazine with its pages laden with nature-love and words of cheer, was the tie that bound together the hearts of the ornithologists of Iowa a quarter of a century ago.

Boone, Iowa.

DISTRIBUTION OF BLACK-THROATED GREEN WARBLERS AND WILSON'S WARBLERS WINTERING IN CAMERON COUNTY, TEXAS, DURING THE SEASON OF 1933-1934

BY L. IRBY DAVIS

The year 1933 developed the most unusual and interesting biological conditions in the lower Rio Grande Valley of Texas, particularly in Cameron County. The several hurricanes which struck here or near here during the summer and fall were each accompanied by and followed by heavy rains. The rainfall for the months of July, August, and September was so far above normal that entirely different growing conditions obtained. The U. S. Weather Bureau at Brownsville reports the total rainfall during these months as 26.14 inches (nearly three times normal average). Usually this country exhibits all the earmarks of its semi-desert character during the summer and frequently during the month of August even the most resistant weeds are burned black by the sun. This season grass and weeds grew rankly all summer and fall. The trees did not make much showing on account of the storm damage—most of those that escaped more serious damage were completely defoliated by the last hurricane. As would be expected we had an enormous crop of insects. This gave a food supply for insect-eating birds far above the average.

The winter was extremely mild. The mean temperature during December, 1933, was 68.8° F. This was 7.6° above normal and the highest mean temperature since 1889. During January and February, 1934, the mild weather continued. However, our spring was late and cool and the only killing frost of the winter came in the last half of March.

It seems that the mild weather and (or) the plentiful food supply may have caused a northward shift of the winter residence of several species of warblers.[1] Of particular interest was the wintering here of the Black-throated Green Warbler (*Dendroica virens*) and the Wilson's Warbler (*Wilsonia pusilla*). The Black-throated Green Warbler was found to be widely distributed over the lower southwestern portion of the county throughout the winter. Unfortunately, I do not know when these birds arrived as my first trip into this part of the county since early summer was made on December 23. During the last week in December and the first half of January I observed them at many points

[1]The Black and White Warbler (*Mniotilta varia*), the Nashville Warbler (*Vermivora ruficapilla* Ssp.), and the Pine Warbler (*Dendroica pinus*) were all represented by several times the usual number of winter residents. This was the first season since I came here in 1925 in which I have observed the Pine Warbler.

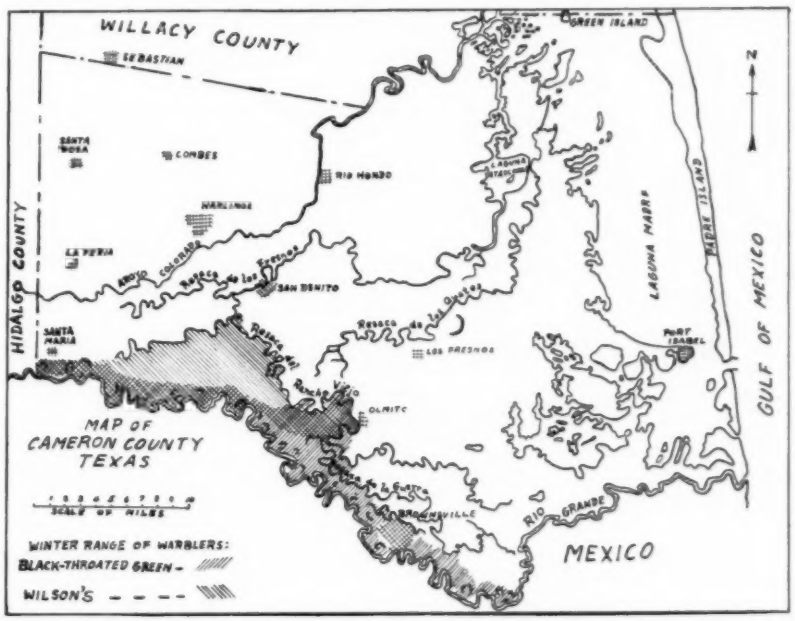
between the Resaca del Rancho Viejo and the Rio Grande, from Santa Maria at the western boundary of the county across to Olmito and thence southeastward to the southernmost point in Texas some ten or twelve miles southeast of Brownsville.[2] These birds were found only in what may be called the lower resaca association, i. e., the heavy growth of trees, shrubs (chaparral), and vines which extends a short distance on either side of the resacas and ponds and in a few places along the banks of the river. Near the river south of Brownsville this becomes a somewhat different association as the native palm, *Sabal texana*, is encountered in large numbers. Where the palms were thickest this species of warbler became much scarcer apparently and I could find none at all in Rabb's Palm Grove.

About the middle of January I turned my attention to the more northern parts of the county and for the next two months searched diligently every habitat which appeared to be suitable for either of the two species under discussion, but without avail. To two places in particular I returned again and again. One was just east of Combes where a heavy growth of ebony, mesquite, and huisache trees occurred and where there was enough moisture in the soil to permit the growth of elms, a tree very seldom found north of the Arroyo Colorado. The other was near the mouth of a small stream emptying into the Arroyo a short distance southwest of Harlingen where I have always found these warblers in past years during migration. I was very much disappointed with the last mentioned place, especially, because I felt sure that one or the other if not both of the warblers would move into such a favorite haunt before spring.

A Wilson's Warbler was observed on January 8 in a resaca-side thicket habitat. Although I saw this bird only a few seconds before it flew into the thickest of the foliage and was lost and although I could scarcely believe that this species was also wintering here, I knew I could not be mistaken for I was at very close quarters and the bird had the distinct cap of the male. Near the same location (southeast of Santa Maria) another or the same bird was observed carefully with 10x32 binoculars on January 14 from a distance of about thirty-five feet. It flitted about busily catching insects on the outer twigs of an ebony tree. I could detect no difference in the coloring or appearance of this bird and the migrating specimen usually seen here about the first of May. Although I returned to the favored association only

[2]This species no doubt wintered in spots (near the river) across Hidalgo County also as there were two reported in a Christmas census from Mission printed in *Bird-Lore*, January, 1934.

once a week for the next two months, I kept a sharper lookout for Wilson's Warblers from now on and during the next few weeks found them in numerous other, though scattered, locations. By the end of February I had the range of this species mapped out as extending from the southwestern corner of the county across to Olmito and northward to a point about 2.5 miles south of San Benito. I was very much sur-



prised to find this range extending farther north than that of the Black-throated Green Warbler. On February 11 a Wilson's Warbler was found in a mixed flock consisting of one Black and White Warbler, two Ruby-crowned Kinglets (*Corthylio calendula*), three Blue-gray Gnatcatchers (*Polioptila caerulea*), and nine Orange-crowned Warblers (*Vermivora celata*) in a resaca-side thicket. I was almost certain that there were two Wilson's Warblers in this flock but could never get two in view at the same time; hence, recorded only one. This was the farthest north that any of the hundreds of specimens of the species that wintered in the county were found. As near as I could estimate the exact location of this spot was 26° 6′ 12″ N. and 97° 39′ 25″ W.

I was so busy working the northern part of the county that I made no attempt to determine the concentration of Wilson's Warblers

in their favorite habitat until spring. On March 25 I went to a resaca-like pond about a mile southeast of Santa Maria and forced my way under a thicket to the water's edge. Then I worked my way along near the shore, usually in a stooping position but frequently on hands and knees and sometimes prone wriggling snake fashion, for a total distance of possibly one-quarter mile. Of course my field of view was quite limited under such a low hanging canopy of huisache and hackberry branches matted and weighed down as they were with vines and a great deal of my attention naturally had to be directed toward the business of getting through the brush; nevertheless, I succeeded in listing six Wilson's Warblers, widely separated, and so proved to my satisfaction that these birds were much more plentiful than the scattered individuals I had observed previously had indicated.

In an attempt to determine the relative concentration of different warblers in the favored southwestern corner of the county, I made a census on a small track about eight-tenths of a mile southeast of Santa Maria on January 14, 1934. The time and location were carefully selected. The area was 335 paces long and 75 paces wide and consisted of what appeared to be a dried-up resaca bed. At any rate it was a low flat strip covered with grass and weeds and contained a scattered growth of huisache trees mixed with occasional mesquites and retamas. This narrow strip was bordered on either side by an almost impenetrable growth of trees, shrubs, vines, and cacti growing upon the higher ground. The trees consisted mainly in ebony (*Siderocarpus flexicaulis*), coma (*Bumelia lanuginosa*), hackberry (*Celtis occidentalis*), Mexican persimmon (*Diospyros texana*), brasil (*Condalia obovata*), elm (*Ulmus crassifolia*), anaqua (*Ehretia elliptica*), mesquite (*Prosopis juliflora*), retama (*Parkinsonia aculeata*), huisache (*Acacia farnesiana*), ash (*Fraxinus velutina*), tepeguaje (*Acacia acapulcensis*), and anaquita (*Cordia boissieri*). The frequency of occurrence or relative number of a given species of tree is in general indicated by the place in the above list; however, in one or two spots there was a much heavier growth of elms and in these places the elm and the hackberry replaced the ebony in dominance. At the time of the census the birds were traveling across this relatively open strip (mostly from the south to the north bank of heavy jungle growth) and feeding in the huisache trees. As I very leisurely strolled eastward down the opening, I studied each bird carefully with my glasses and recorded them at once. Proceeding thus for approximately one thousand feet, I then turned and paced off the distance covered and finally totaled up the following results: Myrtle Warbler (*Dendroica coro-*

nata), 32; Black-throated Green Warbler, 27 (11 male and 16 female); Orange-crowned Warbler, 11; Black and White Warbler, 8; Nashville Warbler, 3; Western Yellow-throat (*Geothlypis trichas*), 2; Audubon's Warbler[3] (*Dendroica auduboni*), 2; Wilson's Warbler, 1. As a relative gauge some other birds were counted at the same time. The most numerous species aside from kinglets and gnatcatchers were as follows: White-eyed Vireo (*Vireo griseus*), 4; Gray-tailed Cardinal (*Cardinalis cardinalis*), 2; Western Mockingbird (*Mimus polyglottos*), 2. The above ratios, I believe, give an accurate picture of conditions as they existed from Santa Maria to Olmito and no doubt for some distance between Olmito and Brownsville. South of Brownsville, however, they would not hold as the Black-throated Green Warbler was scarcer and as far as I could determine the Wilson's Warbler was entirely absent. Also in the vicinity of palms of the fan-leaf type the ratios would not hold as the Sycamore Warbler (*Dendroica dominica*) would be high up in the list.

The Black-throated Green Warblers were observed singing for the first time on April 7, but from then on they were heard on every side throughout their range. It seems that this singing was their way of letting us know they were about to leave, for by the 15th not a one could be found. Both species left at the same time. There was no gradual movement across the county as far as I could observe. They stayed within the bounds of the winter zone until ready to leave the county entirely.

HARLINGEN, TEXAS.

[3]Only those birds showing definite yellow patches on the throat were counted as Audubon's, doubtfuls being classed as Myrtle.

SOME OBSERVATIONS ON A PAIR OF RED-TAILED HAWKS

BY PENNOYER F. ENGLISH

The data presented herein were taken by the writer when a graduate student of the University of Michigan working on the Williamston Game Management Project.[1] This coöperative project concerned itself mainly with managing farm lands to increase game species, particularly the pheasant. The writer was assigned the problem of determining "Causes of Pheasant Mortality in Michigan".[2] The Red-tailed Hawk (*Buteo borealis borealis*) was found to be one of these causes at Williamston, Michigan.

Barrows (1912), writing on the Red-tailed Hawks, says, "This hawk is rarely if ever found in Michigan in winter, but arrives from the south very early, usually before the middle of March, and remains until mid-October or later." In the course of this study, however, they have been observed during every month of the year. Therefore it seems probable that they may winter here. The winter records for these hawks in Williamston Township are shown in Table I. These hawks are not numerous in the township, due to the activities of residents directed against them. Many of them are of the opinion that they are detrimental and for that reason they are kept at a minimum.

TABLE I

A Table Showing the Number of Times that Red-tailed Hawks Have Been Observed at Williamston During the Winters of 1931 and 1932.

	Activities				Perching		
	Flying	Circling	Hunting	Mating	Tree	Woods	Total
November	1	----	----	----	12	1	14
December	2	----	----	----	8	----	10
January	2	----	----	----	1	----	3
February	2	1	3	----	11	4	21
March	2	3	----	2	7	----	14
Total	9	4	3	2	39	5	62

BREEDING HABITS AT WILLIAMSTON. A pair of these hawks was observed on February 11, 1932, and frequently thereafter, flying over

[1]Agencies that have coöperated at one time or another are the Izaak Walton League of America, the Michigan Department of Conservation, the Michigan Department of Agriculture, the U. S. Biological Survey, the Sporting Arms and Ammunition Manufacturers Institute, the American Game Association, Michigan State College, the University of Michigan, the Williamston Progressive Hunting Club, and farmers in Williamston Township, Ingham County, Michigan. Particular credit is due Mr. Harry F. Harper, whose enthusiastic moral support and generous financial backing aided in the studies completed. The work was supervised by H. M. Wight of the University of Michigan.

[2]"Causes of Pheasant Mortality in Michigan", unpublished Ph. D. thesis, University of Michigan, 1934, by P. F. English.

a territory which will be described later as their feeding or hunting area. Only this one pair nested successfully in the township in 1932, showing the scarcity of the birds in the area.

On March 21, 1932, while the heaviest snowstorm of the winter (eleven inches) was in progress, a Red-tailed Hawk was observed on a horizontal branch of a basswood tree about fifty feet from the

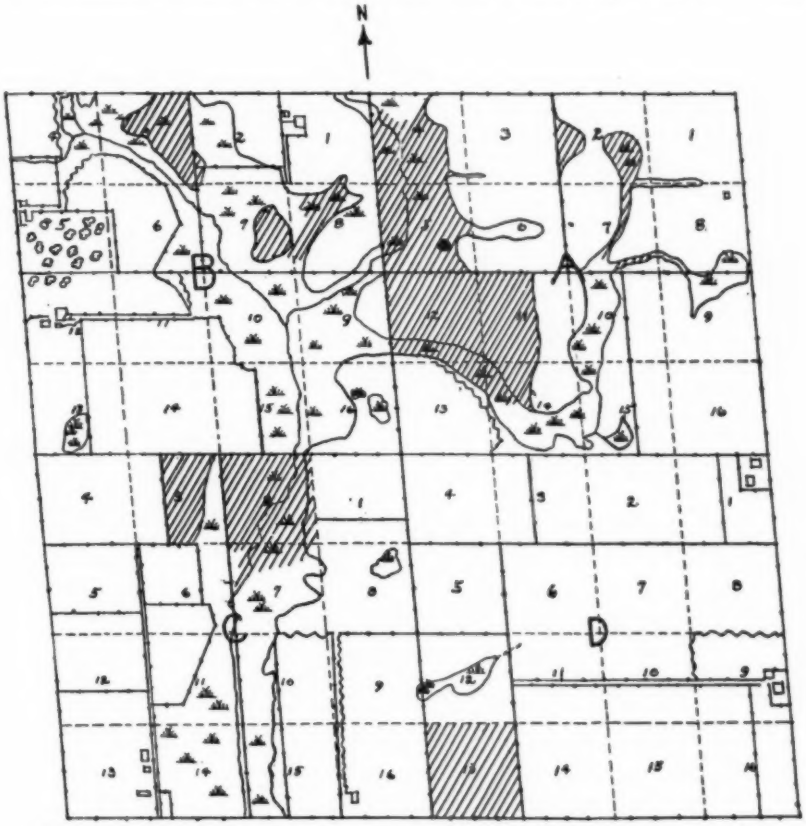


FIG. 18. Williamston Township, Williamston, Mich. The location of the Red-tailed Hawk's nest is shown by the solid black circle.

ground. In a short time a second red-tail alighted on the same branch within a foot of the first one. Subsequent events proved them to be male and female. Ten minutes later at 9:15 A. M., the second hawk copulated with the first, and while the act was in progress the female gave a series of screams characteristic of the species. After mating the male perched on the branch beside the female and both remained quiet for six minutes, when the female flew away, followed a minute later by the male.

From certain peculiarities of markings, these hawks, especially the female, which had one of the primaries of the right wing broken, could be easily identified whenever observed.

The Nest. On April 23 a Red-tailed Hawk nest was discovered in a tree about fifty feet from where the mating had occurred on March 21. The nest was in the uppermost crotch of a basswood tree, sixty-five feet from the ground in an upland, cut-over woods at the point indicated on the accompanying map. The surrounding land had an especially heavy population of game as compared with adjacent areas, which had more of a rodent population. So far as could be determined by field observations, the area hunted by this pair of hawks was about 5,000 acres. Thus their cruising radius was about one and one-half miles. The hunting territory of these hawks overlapped that of a Great Horned Owl and that of two pairs of Marsh Hawks. Two very young hawks in down plumage were first observed in this nest on May 2, one noticeably larger than the other, which is seemingly a characteristic of broods of young hawks and owls. Besides the young hawks, the partial remains of a female Japanese Pheasant, a band No. A-880 from a Hungarian Partridge, and a few twigs of juneberry with leaves and buds were found in the nest.

Feeding Habits. In order to study better the feeding of these hawks, their nest was removed from the tree and the young were transferred to a false nest constructed from old unpainted lumber, three feet square and two feet deep, with a solid bottom. This nest was placed nine feet from the ground in a small maple tree about ten feet from the original nesting tree (see Figure 19). The actual transfer from one site to the other was made on May 16 during a sudden heavy spring shower. The young at this time were still in their down plumage.

The new nest was visited twice daily to ascertain whether the experiment was going to be successful. It was necessary to hand feed the young with hamburger for the first few days. By May 19, however, the parent hawks discovered the young and fed them a juvenile cottontail. Thereafter food was brought regularly. A possible explanation for the adult hawks' not finding the young promptly might be the windy and rainy weather of this period.

Before going into detail as to the feeding habits of the Williamston red-tails, it might be well to review the feeding habits of the red-tail as reported by other workers. In a sense the findings herein reported are not comparable, since the hawks studied were a single pair and their young, giving a picture of their diet from May 19 to July 15.

Other workers, with the exception of Errington (1930) have based their conclusions on the stomach analyses.

Fisher (1893) examined the stomachs of Red-tailed Hawks from the District of Columbia, twenty-four states, and two Canadian Provinces. He states: "Of 562 stomachs examined, 54 contained poultry

FIG. 19. Improvised nest for the Red-tailed Hawk, at Williamston, Mich., 1932.

or game birds; 51, other birds; 278, mice; 131, other mammals; 37, batrachians or reptiles; 47, insects; 8, crawfish; 1, centipede; 13, offal; and 89 were empty."

Warren (1890) examined the stomachs of 173 and found: 131 contained the remains of mice; 6, rabbits; 3, red squirrels; 2, skunks; 18, small birds; 14, poultry; 3, insects; 3, snakes; and 4, offal or carrion.

Errington (1933), in his study of raptor food habits, compiled from the 165 individuals of prey tabulated as quantitative data, gives the following: "Cottontail (including 8 or more juvenals), 18; arboreal squirrel, 11; Franklin ground squirrel, 3; striped ground squirrel, 49; chipmunk, 3; Norway rat, 1; meadow mouse, 42; deer mouse, 4; house mouse, 1; weasel, 1; shrew (5 Blarina, 1 Sorex), 6; young horned lark, 1; domestic pigeon (young?), 1; domestic chicken (all young but two), 18; gallinule, 1; snake, 4; frog, 1."

Referring back to the improvised hawk nest under study at Williamston, in order to be sure of what was brought in the nest was covered with a piece of old woven wire so that the parent hawks could drop the prey to the young hawks, but were not able to carry off any of the remains of prey not consumed by the young. In this way, by making frequent visits to the nest, it was possible to obtain a record of what the hawks were taking during the period of time covered by these observations. The smaller of the two young died May 26, ten days after it was placed in the new nest.

The following specimens of vertebrate prey were brought into the nest by the adults during a period of seventy-four days, between May 2 and July 15: Avian prey: Pheasants, 7; Hungarian partridge, 3; quail, 2; flickers, 3; starlings, 2; and sparrows, 2. Mammalian prey: moles, 7; Microtus, 7; cottontail (juvenile), 5; weasels, 5; fox squirrel, 5; red squirrel, 1; and spermophile, 1. One milk snake was also brought in. Some of the smaller animals, especially *Microtus*, were eaten immediately and left no trace. For this reason they could not be recorded from remains found in the nest. Pellet analyses disclosed, however, that many animals were eaten which were not observed as fresh prey. On the basis of the ninety-four pellets analyzed, *Microtus* runs up to sixty-two and other small birds to fifteen. A summary of the prey brought to the nest is given in Table II.

Mention should be made of the fact that the young hawk was held in the nest much longer than normal. It was noticed on June 1 that the young raptor was making use of its wings so that on this date a leather anklet was attached to its tarsus, in a manner similar to that used by Errington (1932). To this was fastened a small snap and swivel and two feet of light chain which was secured to the bottom of the nest. In this way the young hawk was held in captivity until released on July 14, some forty-five days later than the hawk would normally have remained on the nest. Table II summarizes our observations together with data on the food taken by the Red-tailed Hawks as compiled from various sources.

TABLE II

Food of the Red-tailed Hawk on a Percentage Basis.

	792 Stomachs		Prey Brought to Young	
	Warren	Fisher	Errington	English
Fowl	8.09	7.29	10.99	0.00
Game birds	0.00	2.31	0.60	10.52
Other birds	10.40	9.07	1.21	13.15
Mice	75.72*	39.50*	28.48	54.38
Shrews	0.00	6.22	3.63	0.00
Rabbits	3.46	4.62	10.99	4.38
Other mammals	2.89	10.83	41.21	16.83
Batrachians	0.00	2.49	0.60	0.00
Reptiles	1.73	3.55	2.42	3.81
Insects	1.73*	8.18*	0.00	0.00
Crayfish	0.00	1.42	0.00	0.00
Centipedes	0.00	0.179	0.00	0.00
Offal	2.31*	2.31	0.00	0.00
Empty	0.00	15.81	0.00	0.00
Total	106.33	113.77	100.00	100.00

*Some duplication.

The information compiled in the above table was obtained in different ways. The data of Warren (1890) and Fisher (1893) were compiled from stomachs of 792 red-tails, and were based on the stomach analysis method. By this method at most only one meal can be recorded for each hawk taken, and when the stomach was empty no evidence of the bird's food habits was provided. It is not the intention of the writer to underestimate the value of this method. It is felt, however, that the findings based on observations of kills and pellet analyses are more indicative of food habits.

Although the Red-tailed Hawks are commonly called "chicken hawks" or "hen hawks", it will be noted from Table II that not one chicken was brought to the nest under observation during the period of study from May 2 until July 15, even though plenty of poultry was available in their hunting territory. The fact that they took so many game birds deserves comment. On April 9, 1932, at 3:00 P. M., the State Department of Conservation released fifty-six leg-banded Hungarian partridges, all of which were hand reared and semi-tame. Several of these birds had one wing clipped so that it was impossible for them to fly. These birds were released in one of the improved areas at Williamston. This location was also the well-established hunting area of the red-tails, and three of these partridges, identified by the retrieved leg bands, are known to have been taken by this pair of hawks.

The practice of releasing tame birds in strange surroundings, forcing them to fend for themselves, and placing them in places where

they are forced to escape from predators often proves disastrous to the birds. The wing-clipped partridges that were released were certainly handicapped in their chances to escape from predators. Undoubtedly it is unwise to release wing-clipped game birds. It is not known whether the wing-clipped birds were taken as no record was kept at the game farm.

As indicated in Table II, seven pheasants were brought to the nest. In order to obtain the true significance of this number of pheasants in the diet of these hawks over the period of this study, it is necessary to know the approximate number of pheasants inhabiting the feeding area of the hawks. This information is provided by the semi-annual pheasant censuses which have been made in the years 1930-1933. According to the census data, the 1932 winter population of this area (hunted over by the red-tails, about 5,000 acres) was about 440 birds, and the 1932 fall population was approximately 550 pheasants. Since the midsummer population is known to be considerably higher than either of the figures given, it is probable that the seven pheasants which were brought in to the young hawks comprised slightly more than 1.0 per cent of this population. While this study gave no information as to what the pair of adult hawks were eating during this time, it is possible that they were likewise feeding upon pheasants. Assuming that each ate as many as were brought to the young, an improbably high assumption, this one pair of nesting red-tails may have destroyed approximately 3.2 per cent of the summer population of pheasants in the 5,000 acre area.

Stoddard (1931), in his work with the quail, says: "Unless red-tails are unusually numerous they may well be tolerated upon quail preserves because of their usefulness in catching cotton rats and other destructive rodents, and because they eat snakes, which are the most difficult of quail enemies for man to control."

The determination of the economic status of any species must balance the value derived from their presence against the damage they do. It is often difficult to decide whether certain items in any animal's diet should be considered beneficial or harmful from man's viewpoint. This is true in the instance of the weasels taken by the Red-tailed Hawks. Weasels are commonly thought to be harmful by the layman, but Dearborn (1932) showed that 83.34 per cent of the weasel's diet consists of mice, one of man's greatest enemies.

Conclusions

1. From the information obtained by this study it has been found that Red-tailed Hawks sometimes winter in southern Michigan.

2. In this study, which took place on an area under intensive game management, it was found that these hawks were taking too many mammal and avian game species.

3. The red-tails involved in this study nested in a territory in which there also nested another harmful predator, the Great Horned Owl, and fed in the territory covered by two pairs of Marsh Hawks.

4. From the evidence there is no way to determine whether the hawks had taken sick or weak birds.

5. It is feared that if these individuals are allowed to continue to breed in the territory just studied, since they have developed a taste for pheasants and partridges, they would be very harmful. A part of a game management program would be to control the hawks. Their nesting period overlaps the nesting season of the pheasant and it is feared that they might develop a marked taste for pheasants.

6. Widespread slaughter of red-tails is not recommended but in areas where game management is being practiced, as it is at Williamston, Michigan, systematic control of the offending individuals is necessary. This no doubt would allow useful species to nest in the territory, as, for example, the Red-shouldered Hawk.

7. Since weasels live principally upon mice, might they not be more useful alive than as food for Red-tailed Hawks?

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FURTHER NOTES ON A VERY OLD CARDINAL

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In the WILSON BULLETIN for December, 1933 (p. 152) I recorded the fact that a male Cardinal, banded February 12, 1924, was still about my premises and that he was therefore at least ten years old. His constant companion and mate was a female which I had banded in February, 1933. It is with considerable satisfaction that I am able to report that these birds are still mated and about my home. The male is now (October 1) at least eleven years old. At the west end of my home, on a trellis just outside the dining room window, is a feeding shelf on which I place grain and sunflower seed each morning before I sit down to breakfast. There has rarely been a morning since my last account, that these two Cardinals have not come to the repast within a few minutes. In cold weather they are frequently awaiting in the trees about for their breakfast to be spread; if not, a whistling imitation of the male's song would often bring one or both of them from a distance. Only on one or two occasions have other Cardinals been seen on the premises during the present year. During midwinter the male would fly to the tray closely followed, usually, by the female. She then demurely takes her place to one side until he is through, for if she attempts to join him he rushes her off as he does the English Sparrows. After about five minutes he has satisfied himself and flies away, whereupon she takes his place and likewise rushes the sparrows. On the morning of January 19, the lack of gallantry on the part of the male came to a sudden close. On that morning the thermometer rose from a spell of low temperatures and there was a distinct touch of spring in the air. A Carolina Wren loudly broke a long silence and for the first time the male Cardinal was heard to whistle his spring call. At breakfast time their grain was placed as usual and in a few moments both birds flew to the shelf, the female awaiting "second table" a yard away. He ate leisurely and when he was through, carefully selected a choice kernel, flew to the female and placing it in her beak, flew away. This performance was witnessed nearly every morning from then on until nesting time. As spring advanced his attentiveness became more pronounced and during the period of his breakfast he would feed her sometimes three or four times as she softly chipped to attract his attention. On March 10, she was finally permitted to eat at "first table". The personalities of these two birds are markedly different. The female is notably gentle and quiet of manner. She will alight on the shelf at times while I stand in the open, two yards away. I have never known so gentle a wild

bird. I judge she is relatively young for her plumage is perfect at all seasons. The male is alert and ever watchful—perhaps that is the secret of his long life. He vigorously drives the sparrows away while he eats and during the song period sings as regularly and as well as a young bird. His plumage, however, is poor and his feathers do not lie smoothly upon him. When he lowers his head to eat, a gap appears in the feathers on the back of his neck, giving him the appearance of having a bald neck.

On March 25 both birds inspected the site which they usually choose for their first nest. It is in the top of a privet bush against a south window. Because the new leaves were as yet very small, actual nest building did not begin until April 6. They used the same crotch that has held the male's first nest now for seven years. (I have no proof that the present female has been his mate farther back than 1933 but believe she has). On April 17 the third egg was laid, on the 29th or 30th these hatched and on May 8 the young left the nest. Two of these were noted about the place all through May, being carefully tended by the old birds. The second nest was begun May 21, in the top of a privet hedge, eight feet above the ground, but was deserted upon completion. They then built another, in a similar location and on June 6 began sitting on two eggs. These hatched, the young were banded on June 27, and they left the nest that afternoon. Both adults were singing on the 28th while carrying food to their young. On July 7 they had completed a third nest, nine feet up in a privet against the south wall of the dwelling next door, and later the female was observed sitting on three eggs. These hatched, as did all the others, and this third brood left the nest on July 28. At least two of them have survived and are still about the place as well as one or two young males of an earlier brood. Due to ample rainfall and the green condition of the foliage, I should not have been surprised to have seen them attempt a fourth brood. So far, however, I have been unable to locate another nest. I hope to be able to chronicle another successful season for this pair a year hence.

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HURRICANES AND SUBSPECIFIC VARIATION

BY IVAN R. TOMKINS

Whether we incline to the systematist who lists all manner of subspecific differences and is willing to go to the effort necessary to distinguish them, and thereby find out some of the multitude of facts to be revealed by this system, or conform to the easier and somewhat less technical school which evades such effort, the fact remains that considerable variation does occur, whether recognized and named or not, and any light on how such variations come about is of value.

Variation has often followed isolation by strictly geographic barriers, as when an island of inhabitable territory is entirely shut off by unusable terrain. These barriers are often such as to affect one species only, and a somewhat similar species, perhaps of the same genus, may thrive over a much wider range. But the geographical factor in variation has been well covered before, and is not within the scope of this paper. It is only mentioned as an additional factor, assisting variants to thrive and become stable.

The coasts of the south Atlantic and Gulf states, have several races of the Seaside Sparrow (*Ammospiza maritima*) breeding within a narrow range of altitude, which may illustrate the theory of the effect of hurricanes as a factor working toward subspecific differentiation. The Seaside Sparrow breeds in the low marshes on the salt water, and is a weak flier. It also appears to return approximately to the same place each year to nest.

It is always hard to get far enough away from evolutionary changes to view them in proper perspective, but if the influence of the tropical storm is as great as it now seems, important changes in a species may occur within the limits of a man's lifetime. The periods of expansion and recession of any species are all a part of such changes, and these periods may present to us at times a fairly constant ebb and flow, but are always subject to being entirely thrown out of balance in either direction (towards scarcity or abundance) by certain violent events. Every serious student knows that no species is ever entirely stable, either as to number and range, or as to physical characteristics.

The occasional great storms that develop in the West Indies, and sweep over the marshes of the south Atlantic and the Gulf coasts, covering the breeding grounds of the Seaside Sparrows many feet deep with water, and with attending gales of often one hundred miles an hour, must wipe out much of the bird life in the marshes, particu-

larly the weak fliers, such as the sparrows, the long-billed marsh wrens, and the clapper rails.

What a part these elements play in the decimation of certain forms, and the consequent evolution of new ones cannot now be properly valued, and in fact only dimly glimpsed. It is obvious that if all but a single family group be destroyed, the new inhabitants will have inherited the characteristics, perhaps heightened by inbreeding, of that group, rather than the more average characters of the original widely spread stock.

Wayne, a few miles north of Charleston, S. C., took a few specimens as dark as the race *A. m. fisheri*, which breeds on the coast of Louisiana, and approaches the very dark Dusky Seaside Sparrow (*Ammospiza nigrescens*) from the east coast of Florida. It is now believed that these birds taken by Wayne were aberrant individuals which bred farther north, perhaps from a small family group of similar color. If members of such a group were the only survivors after a severe storm, a dark colored race might result after sufficient time to allow the natural expansion and stabilization.

Again, it is not entirely necessary that a storm should occur in the nesting season to affect such a change, and the breeding stock might be destroyed in fall or winter, several hundred miles from the breeding territory, provided that the birds from this territory should all winter together in one locality. Certain species do just this, and are as selective of the wintering as of the breeding grounds. In the Wayne collection, now in the Charleston Museum, are twelve skins of the Sharp-tailed Sparrow (*Ammospiza caudacuta caudacuta*), that are albinistic. For twenty-three winters he found birds of this same coloration in this same field. Very likely these partly white birds were from one family group that nested in one fairly exact area, and migrated to this same field each year.

The severity of the tropical hurricane is well known. The great storm of August 27-28, 1893, was credited by Wayne and others with destroying much of the bird life in unprotected places. Near Savannah during this storm, large schooners were left high up on the marsh islands, dredges floated across the Tybee Railroad tracks (which are about fourteen feet above mean low water), and at the Quarantine Station water covered the floors of some of the quarters, which were at least twenty feet above low water. These storms often cut a swath half a state wide across the coastal marshes, commonly in Florida though less often in the more northerly states.

Prior to the 1893 storm, little data was gathered and preserved that would now be of much use in determining just what happened to any one species. About the only usable material would be records of breeding abundance and skins of breeding birds. Such material as can be found in the old publications, as contrasted to present knowledge of the breeding range of the Seaside Sparrows of the Georgia and South Carolina coasts, seems to indicate that most of the breeding birds were destroyed, and are now in a period of much greater expansion than at any time within the memory of living bird students.

It is entirely possible that Macgillivray's Seaside Sparrow (*Ammospiza m. macgillivraii*), which was not recognized for so many years, has a somewhat different breeding range, than when described by Audubon, in 1834.

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SOME OBSERVATIONS ON BIRDS IN SOUTHEASTERN OKLAHOMA*

BY ALBERT H. TROWBRIDGE† AND H. L. WHITAKER†

During the greater part of June, July, and August of 1934, the authors were with the University of Oklahoma Biological Survey Field-Party studying the heavily timbered regions of LeFlore and McCurtain Counties in Southeastern Oklahoma. It was during this time that the following observations were made on the Pileated Woodpecker, *Ceophloeus pileatus pileatus;* the Road-Runner, *Geococcyx californicus;* and the Little Blue Heron, *Florida caerula caerula.*

We found the Pileated Woodpecker to be rather rare in the central portion of LeFlore County, although several were seen six miles west of Heavener along the Poteau River and a few others fifteen miles southeast of Heavener along Black Fork Creek in the vicinity of Zoe. Farther south, in the vicinity of Smithville, McCurtain County, they were more numerous and sixty miles south of Smithville on Mountain Fork River they were fairly abundant. None of these birds were seen more than one-half mile from the streams, and the greater number of them were observed along the water-courses.

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*Contribution from the Zoological Laboratory of the University of Oklahoma. Second Series, No. 132.

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Nice (1931) reviews the history and present distribution of *C. p. pileatus* in Oklahoma. Crabb (1930) reported the Pileated Woodpecker to be rare in Oklahoma, except in the sparsely settled, timbered regions of the state. Even here he never observed more than four individuals in a full day in the field. He found this species to be very wary and experienced difficulty in determining the sex of individuals observed in the field. We had no trouble in approaching to within a few feet of these birds on several occasions, and it was not uncommon to see ten or fifteen of them in a half-day in the field. Apparently the Pileated Woodpecker is increasing in numbers in southeastern Oklahoma. Our observations lead us to believe that individuals of this species are most abundant in southeastern McCurtain County and decrease in numbers from south to north along the eastern border of the state.

Only a single Road-Runner, *Geococcyx californicus*, was seen during the entire summer. This individual was observed on the road between Tiner and Whitehall schools, six miles east and two miles south of Broken Bow, McCurtain County, in typical pine-oak forest. It was first seen at two o'clock in the afternoon, August 16, as the authors were going into Broken Bow. The bird ran into the undergrowth beside the road and could not be found. Two hours later we again saw the bird in the road and although it ran into the brush we were able to collect it. Unfortunately the skin was destroyed by an opossum that night.

Nice (1931) gives a complete account of the history and present distribution of *G. californicus* in Oklahoma. She reports this species as having been observed in McCurtain County in 1929, but does not mention the locality. To the best of our knowledge, this is the first published account giving the exact location where this bird has been seen in McCurtain County, and it is the second record of this species from the southeastern part of the state. As Mrs. Nice points out, the Chaparral has been steadily working eastward through Oklahoma during the past thirty years, but it would seem that it is not increasing to any great extent along the eastern border of the state. It is not unlikely that the pine-oak forests of eastern Oklahoma will mark the eastern limits of the range of this species, and that these birds will always be of rare occurrence in the area studied by us.

On the other hand, the Little Blue Heron, *Florida caerula caerula*, particularly the immature, white form, was found to be abundant along the larger streams in both LeFlore and McCurtain Counties. They

were present in such numbers that they formed a serious menace to the smaller fish of the area.

Due to the general dryness of the season, all streams were low and many of the smaller ones almost completely dry. Such water as they contained was in isolated pools seldom more than a foot or two deep. As was to be expected, the fish were heavily concentrated in these pools. Daily observation showed that the herons were taking advantage of this fact for several of them would congregate about the edges of the pool and within a few hours there would not be a single small fish left.

This was equally true of the shallower places of the larger streams, where often flocks of twelve to fifteen of these birds were observed fishing. Mrs. Nice (1931, p. 56) in her list of the food of these birds includes what she terms *worthless fish*. Our observations lead us to take exception to the use of this term. In the first place, it is almost impossible to define the term as she employs it. Probably she means the smaller, non-game fishes, but if so she is gravely in error. Many of the minnows form an important source of food for the game fishes, and in addition, the carnivorous species are an important factor in mosquito control. This particularly applies to the top minnows of the genera *Fundulus* and *Gambusia* which are easy prey for fish-eating birds. In an area such as that studied this summer, where malaria is all too prevalent, the smaller fishes are very important from an economic view-point.

It is also obvious that the fry of game fish, which are generally found in shallow water, are eaten in large numbers by herons and other similar birds. In many of the small pools which we observed there were many small bass and sunfish, but they were eaten along with the rest of the smaller fishes. We are certain that the majority of the fishes eaten by the Little Blue Heron can not be termed *worthless fish*.

In calling attention to these food habits, however, we do not mean to imply that the Little Blue Heron should be wantonly slaughtered, but we merely mean to show that much of its food is composed of a group of animals of general economic importance.

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SOME CHANGES IN THE BREEDING BIRDS OF UPSHUR COUNTY, WEST VIRGINIA

BY MAURICE BROOKS

Geographically speaking, the State of West Virginia is in an anomalous position. Since it extends farther north than Philadelphia, it should rate as a Northern state, were it not for the fact that it reaches farther south than Richmond, and therefore may be ranked with the South. The Eastern "Panhandle" goes farther east than Buffalo, so it might qualify with the East, did it not extend farther west than Cleveland, and so must be placed with the Middle West. Coupled with this geographical range is a wide elevation range; from 262 feet at Harper's Ferry to 4,860 feet at Spruce Knob. In no way is this confusion more plainly marked than in the field of outdoor life. The State is a meeting place for diverse forms, and it has not yet had a tithe of the study it deserves.

Upshur County is well located as a field of study, for it lies near the geographical center of the State, may be regarded as typical in soil and forest conditions of a large part of our area, and has no extremes of elevation, since it extends from 1,300 to 2,700 feet above sea level. Furthermore, outdoor life, bird, plant, mammal, and insect, has probably been more thoroughly studied here over a long period of time than in any similar area in West Virginia.

It is the purpose of this paper to record, and comment briefly upon, some of the changes that have taken place in the county's list of breeding birds during the last twenty years. This covers the period of the author's observations, but he has also been assisted by the observations of Earle A. Brooks, A. B. Brooks, F. E. Brooks, and others, some of whose studies extend much farther back. From 1913 to 1933, however, the author has spent a part of every season in the county, and during most years this has been a major portion of the time. Work has been done in every one of the six Magisterial Districts of the county, although the vicinity of the village of French Creek has been headquarters.

At the time this study begins the well-known eastward movement of the Prairie Horned Lark had already reached the county, so it is not covered in this paper. Neither do I include the Starlings which have become established during the period, nor the Ring-necked Pheasants and Hungarian Partridges that have been introduced by the State Game Commission. Only native birds that are believed to have changed their breeding status here materially are included.

Practically all of Upshur County has been ascribed to the Transition Life Zone, such birds as Least Flycatcher and Black-throated Green Warbler being nesting species at the average elevations, and over a wide territory. Were it not for such summer residents as these, some of the following notes might tend to indicate that the county might better be included in the Carolina section of the Upper Austral Life Zone. It is this mingling of forms that makes the bird life here particularly interesting.

The following species have changed their breeding status here sufficiently to be included in these notes:

Least Flycatcher. *Empidonax minimus.* Twenty years ago Least Flycatchers were regarded as breeding only in the higher Alleghanies of the state. In 1927, however, I first heard it in June along the Buckhannon River, near Sago, Upshur County. In 1928 it appeared at French Creek during the breeding season, and it has been here every year since. I have also noted it during the summer at Tennerton and Rock Cave. In June, 1931, I watched old birds feed young along French Creek. There are no indications that it bred here prior to the time that I first discovered it in 1927.

Eastern House Wren. *Troglodytes aedon aedon.* For some reason unknown to the writer House Wrens were exceedingly rare in Upshur County, some years being entirely absent, until the 1920's. They first appeared in numbers about 1925, and have been increasingly abundant since. Three pairs nested near our residence in 1933 (at least there were three nests!) and every building in the neighborhood seemed to have its pair. Our first breeding record was in 1911, and scattered pairs probably nested before that time, but at no period was the bird at all common.

Bewick's Wren. *Thryomanes bewicki bewicki.* As the House Wrens waxed in numbers the inevitable happened; the Bewick's have become strikingly less common. At the beginning of the period covered in this paper, Bewick's Wrens were by far the commonest breeding species of the group in the county. Their disappearance has coincided exactly with the increase in the House Wren population. In 1914 there were six pairs on the premises; in 1933 a single pair bred. At Tennerton I recorded three nests in 1927, three in 1928, one in 1929, one in 1930, and not a single one since. In the town of Buckhannon the Bewick's Wrens were common until a few years ago, but, save for a few days during migration, they are not heard now. This is a matter of concern to us, for the Bewick's Wrens are in every way

more desirable. Incidentally, observations in other parts of the state have shown the same thing taking place; the Bewick's not nearly so common as formerly. I have one positive record of force being used by House Wrens to dispossess the Bewick's. In 1931 a pair of Bewick's began a nest in a box on one of our outbuildings. A few days later I found the House Wrens carrying material into the same box, and they subsequently raised a brood there.

Eastern Mockingbird. *Mimus polyglottos polyglottos.* Numerous observers have written of the northward spread of the mockingbird, and it has been quite noticeable in Upshur County. A pair were recorded as nesting in Buckhannon as early as 1914, but of recent years the species seems to breed sparingly every season. I have recorded nests at Tennerton, in Buckhannon, and near French Creek. As in other areas, the birds seem more common in winter. I knew of six wintering birds in the county last year, although but a single nest was recorded during the preceding breeding season.

Black-throated Green Warbler. *Dendroica virens virens.* If Upshur County is really a part of the Transition Life Zone, the presence of this species as a breeding bird should occasion no surprise, but the fact is that it was entirely absent from the greater portion of the county until the last few years. The first definite county breeding record was established by Fred E. Brooks when he found a nest with three eggs near French Creek on May 29, 1922. In 1933 I knew of six singing males in an area of 150 acres. I have heard the song during the nesting season at French Creek, Sago, Tennerton, Selbyville, Rock Cave, and other points in the county. These birds are now widely spread over an area where, until a few years back, they were entirely wanting.

Cerulean Warbler. *Dendroica cerulea.* Brewster's classic description of this bird as a breeding species in West Virginia was written of conditions as he found them in Ritchie County, a region very definitely within the Carolina Life Zone. The first summer record for Upshur County was made at French Creek June 21, 1925. A male bird sang in the grove of the Presbyterian Church there throughout the season. There seems to be no reason for doubting that it bred there. In 1932 I saw a female feed young birds at French Creek. These birds sing regularly now along the Buckhannon River near Tennerton and Post's Mills. I have heard them along the Little Kanawha River near Arlington.

Northern Prairie Warbler. *Dendroica discolor discolor.* This bird is one of the most striking additions to our avifauna. Until recent

years it was not known to breed in this general section of West Virginia, but individuals sang here during the summer of 1927. The first nest was found at French Creek on June 23, 1930. I have recorded in the WILSON BULLETIN that a pair used the identical location again in 1931, the nest having three eggs on July 2. Last year the nest was again close to the original location. Three male birds sang in a twenty-acre brushy region in 1933. These birds are now common in all sections of the county.

AMERICAN REDSTART. *Setophaga ruticilla.* The redstarts overlooked this county as a breeding place for many years, but they are now making up for lost time. I first noticed them at French Creek in the summer of 1929, and they have become more abundant each year. They nest regularly along the Buckhannon and Little Kanawha Rivers. Why they appeared here only recently (no previous records for at least forty years) I do not know.

SUMMER TANAGER. *Piranga rubra rubra.* This is another Upper Austral bird to extend its range to our territory during the last few years. In 1933 a male Summer Tanager sang through the season within a hundred feet of a pair of nesting Least Flycatchers. Nearly fifty years of observation in the county failed to yield a single record until 1930, when one was seen in June at French Creek. Since that time they have been present every season, and I have recorded them from Tennerton, Rock Cave, and Kanawha Head. They have been reported from Daysville and Sago. A pair developed quite a fondness for our early cherries in 1933.

EASTERN SAVANNAH SPARROW. *Passerculus sandwichensis savanna.* I have noted elsewhere (*Auk*, October, 1933) the remarkable spread of the Eastern Savannah Sparrow through northern West Virginia and western Maryland. Since that note appeared, I have observed adults with young near Buckhannon. So far as I know, this is the southern breeding record for the species.

EASTERN LARK SPARROW. *Chondestes grammacus grammacus.* One of the noteworthy bird movements that the state has experienced took place about twenty years ago when the Eastern Lark Sparrows appeared in numbers. The first state breeding record was made in Upshur County May 12, 1915. The following year I found four nests within one hundred yards of my home. About 1920 the birds began to be less abundant, and by 1933 it was something of an event to see one, although I have a breeding record for 1932. A few still occur each season in favored places in the state, but the birds are very much on

the decline in this area. In fact, I have not heard of a single record outside this county for the last three years.

BACHMAN'S SPARROW. *Aimophila aestivalis bachmani.* An ornithological surprise of the year 1910 was the appearance in West Virginia of numbers of Bachman's Sparrows. This visitor from the Carolina Life Zones lost little time in making himself at home here with birds of the Transition Zone. The first West Virginia breeding record for this species also was made in Upshur County, July, 1915. In 1925 a pair used our feeding shelf during May, a most unusual experience. By 1928 we were recording them much less frequently. In 1931 I heard a single individual near Rock Cave. Two were seen near Buckhannon during the summer of 1932, and in 1933 I heard a single individual near French Creek. I do not know of other recent records for this species.

This concludes the list of those species whose breeding status has changed enough to make it worth recording. As may be seen, some species spread from the higher elevations down to our area, more came to us from the lower elevations, one species (the Savannah Sparrow) seems to be definitely moving south, while the Lark Sparrow came to us from the West. It is worth mention that until recent years the Prairie Warbler had not been reported from the state except in the eastern portion. Thus, North, East, South, and West have contributed to make bird life richer for a time at least.

Two notable changes in migration might be recorded. Until the last ten years Fox Sparrows were exceedingly common here in migration; now they are regularly very rare. Until 1924 White-crowned Sparrows were definitely regarded as rare migrants. That year they were abundant, and they have been so every season since, both Spring and Fall. It is fascinating to watch these changes in any locality, but I am of the opinion that in the twenty years covered Upshur County has had more than its share.

FRENCH CREEK, W. VA.

HAWKS AND THEIR NESTS IN MICHIGAN

BY LAWRENCE WARD

To the average person a hawk is a hawk, or if one wishes to be more specific, one says, "All hawks are thieves, and I shall shoot whenever I am near one." This tendency may be partly explained by the fact that some are destructive, and because of the difficulty in learning to distinguish species they are all classed as harmful. The tendency is further explained by the mania of many hunters to shoot any large or shy bird, and to consider a successful kill as an indication of marksmanship. Not long ago I was in a rookery of blue herons. Floating around in the flooded woods were several of those beautiful birds which had been shot down by some ruthless hunter, and left to decay in the water. Climbing to some of the nests, I found young birds in practically every nest.

Not all hawks possess equally destructive habits, in fact a few are of great economic value to the farmer. There are nine species of hawks found in Michigan under the family name of *Buteonidae*. Three of these, Cooper's, Goshawk, and Sharp-shinned, may be classed as very destructive. The Red-tailed Hawk is one which occasionally gets bad habits. The Marsh, Red-shouldered, Swainson's, and Rough-legged Hawks are decidedly beneficial, or at least economically harmless. One of the ways by which one becomes familiar with the species, is to study their nesting habits. To visit an individual in his home, is to become acquainted.

Hawks are early nest builders. The Red-tailed Hawk is probably the earliest, beginning the nest often during the last half of March. The Red-shouldered, Swainson's, and Broad-winged Hawks nest from April 1st to May 10th. Cooper's Hawk nests from late April to mid-June. The Marsh Hawk nests about the middle of May. The Sharp-shinned Hawk and Goshawk are rarely if ever found nesting in Michigan. The Rough-legged Hawk nests in Labrador.

Let us imagine that we are spending a few hours looking for hawks' nests. Of the hawks named above as nesting in Michigan, only the Marsh Hawk nests on the ground; the others nest in trees at heights varying from twenty to a hundred or more feet. The nests are usually placed in trees located in small patches of woods, although the Red-tailed Hawk sometimes builds its nest in trees standing in the open. We may direct our attention then to the farm woodlots comprising from five to twenty acres.

One fact that simplifies the finding of hawks' nests is that most of them are built before the leaves are started on the trees. One soon

FIG. 20. Nest of the Red-tailed Hawk, in Michigan, seventy-five feet from the ground.

FIG. 21. Nest of the Red-shouldered Hawk, in Michigan, thirty-eight feet from the ground.

discovers though that spring trees contain many large nests. Briefly these nests may be described as follows: There are the large round leafly nests which are the nests of squirrels, built during the fall and winter preceding. Then there are the old and new crows' nests. These more closely resemble possible hawks' nests. Usually old crows' nests can be distinguished by the blackened and dilapidated condition apparent even from the ground. New crows' nests usually show an abundance of dried grass used in construction. If the nest is new, the old bird can usually be flushed from the nest by throwing a stick into nearby branches. Then there are the old and new hawks' nests. Old nests may remain in the trees for several seasons, although they are seldom if ever used again.

One soon learns to recognize a hawk's nest almost at a glance, even from quite a distance. On April 18 while driving a car on the highway nearly half a mile from some woods I located a large nest which I later found to be the nest of a Red-tailed Hawk. At another time while driving by a patch of woods bordering the highway I observed a Broad-winged Hawk sitting on the edge of her nest where she had just alighted. When actually in the woods the bird usually flushes from the nest when the observer is about ten or fifteen rods away.

No matter how "good" a nest may look from the ground I have learned from experience not to climb to any nest unless the bird has been flushed. Nothing is much more disappointing and irritating than when after a hard, dangerous climb expecting to find eggs or young to photograph, one finds only an abandoned bunch of twigs. Occasionally one will climb into an uncompleted nest from which the old bird is frightened away and find nothing, but such experience, occasionally, can not be avoided.

Hawks' nests can not be considered common, in fact they may be considered rare. Woodlot after woodlot will contain no nest at all, and I have never found more than a single nest in a woodlot. To locate a nest then brings a real thrill as the old hawk flies rapidly away.

Some identifications can be made as the hawk leaves the nest. A process of elimination can be used. It will not be a Groshawk, Sharp-shinned, or Rough-legged Hawk, as they nest beyond the Northern boundary of Michigan with perhaps a few exceptions. A Marsh Hawk never nests in a tree. Swainson's Hawk is a mere straggler from the West, rarely nesting in Michigan. That leaves identification to four species, Red-tailed, Red-shouldered, Broad-winged, and Cooper's. Ref-

FIG. 22. Nest of the Broad-winged Hawk, in Michigan, fifty feet from the ground.

FIG. 23. The same nest (as above) as seen from above.

erence to dates of nesting will further aid in identification of these four. The Red-tailed Hawk can often be identified as it soars over head. As it turns up with its back to the sun, the upper side of its tail feathers will show up reddish brown, even from quite a distance.

More complete identification can be made by climbing the tree, and examining the nest and eggs, a thing which can be done without disturbing further incubation. Then too there is always the possibility of finding the nest of a species only rarely known to nest in Michigan.

Climbing, however, is dangerous and difficult. Perhaps a few words might be given here in regard to this necessary part of bird study.

Ordinary telephone climbers may be used but the spurs should be long and sharp. Then too there is always the danger that the bark may chip out. A firm hold should be retained by the hands or arms at all times. This warning is probably unnecessary for when one gets up from twenty to one hundred feet, one does hang on.

Three other rules may be given. Never climb a tree unless you see the old bird actually leave the nest. Never climb to show off. Thirdly, in climbing always retain a firm hold with at least one hand at all times. I well remember one occasion when I failed to observe the first two, but followed the third. While resting about forty feet from the ground, standing on an apparently solid limb and holding to a green limb about waist high, the lower limb broke like a flash, but the upper limb held.

Big trees are hard to climb. It is difficult to secure a safe hold on big limbs. It is always well to carry about seventy-five feet of quarter-inch rope. This can be thrown over higher limbs and used to steady and support one in climbing, or else to support part of one's weight in descending. It can be used also to raise or lower the kodak. Extreme caution should be used in climbing wet, slippery trees.

One should climb slowly, accustoming oneself to increasing height. Often when the wind is blowing the tree will sway considerably, especially when one nears the top. Unless one has well developed muscles, and can accustom himself to height and danger, it is best not to attempt to climb. One must take chances in climbing.

Probably the largest of the nests, as well as the most difficult to reach will be that of the Red-tailed Hawk. On April 18th I found a nest of this species in a large red oak. The tree had been struck by lightning leaving a large crease on one side bordered with dead bark. It was about twenty feet to the first limb. The limbs were large and

far apart. The rope had to be used both in ascending and descending. The nest was seventy-five feet from the ground, and out near the end of a limb. It was an enormous bundle of sticks, lined with some leaves and dry strips of bark. There were three eggs in the nest. Identification was made by observing the reddish tail of the bird in flight, and by the size and markings of the eggs. These are the largest of the hawks' eggs and average 2.40x1.82.

The Cooper's Hawk builds somewhat later than the other tree nesting hawks, fresh eggs being found into June. They closely resemble the eggs of the Red-shouldered Hawk except that they are without marks of any kind. This is the true chicken hawk. The eggs average 1.92x1.49.

The nest of the Red-shouldered Hawk is not usually so difficult to reach, usually being built nearer the ground. Often, however, as the picture will show, it is built among large limbs which are difficult to climb around. The eggs are three to four in number, dirty white, and nest-stained, sometimes faintly splashed with brown and lavender. They average 2.13x1.70.

Like the Red-shouldered Hawk, the Broad-winged Hawk is apt to build its nest in more accessible places than the Red-tailed Hawk. On April 10th I found the nest of a Broad-winged containing two eggs; on April 14th, a nest made of leaves and twigs, lined with down from the old bird, dry bark, and cornstalks, containing three eggs; and on May 10th, another with four eggs. The eggs average 1.93x1.57. This is one of our beneficial hawks.

A few words may be said concerning the nest of the Marsh Hawk, the only hawk nesting on the ground. The nest is placed in swales, where water stands in the spring, but which dries up in time for the nest about the middle of May. The eggs are pale blue and unspotted, averaging 1.78x1.41. The hawk is readily recognized as it sails close to the ground over meadows and low-lying ground, by the white upper tail coverts. As it makes such a fine mark for "sportsmen", few can resist the temptation to shoot, although it is one of our most beneficial hawks.

A few days spent in the woods in the early spring and summer ought to enable one to familiarize himself with the different species of hawks. This observational study, supplemented by reference to some good bird book, will add to one's knowledge of hawks, and enhance the enjoyment which the nature lover gets out of field trips, or hikes in the woods.

St. Johns, Mich.

THE WILSON BULLETIN

Published at Sioux City, Iowa, by the Wilson Ornithological Club.

The present editorial organization is as follows: T. C. Stephens, Editor-in-Chief, Sioux City, Iowa; Myron H. Swenk, University of Nebraska, Lincoln, Nebraska; L. W. Wing, Ann Arbor, Michigan.

The subscription price in the United States is $1.50 a year, and 50 cents a number; in all other countries of the International Postal Union the price is $1.75 a year, and 60 cents a number. Subscriptions and orders for single copies should be addressed to the Secretary, Lawrence E. Hicks, Dept. of Botany, Ohio State University, Columbus, Ohio.

EDITORIAL

THE TWENTIETH ANNUAL MEETING of the Wilson Ornithological Club will be held at Pittsburg, Pa., on Friday and Saturday, December 28 and 29, 1934, in conjunction with the American Association for the Advancement of Science. Our meetings will be held in the Lecture Hall of the Carnegie Museum. Hotel Headquarters will be at the Fort Pitt Hotel. The Local Committee consists of Messrs. W. E. Clyde Todd, *Chairman*, Bayard H. Christy, Sidney Eastwood, Charles Agostini, J. Warren Jacobs (Waynesburg), and John W. Handlan (Wheeling, W. Va.). Such a splendid committee is an assurance that nothing will be left undone locally to make a successful meeting. We trust that our members will do their part to make a good meeting by attending it. The program will begin on Friday morning. The dinner will be held on Friday evening, in the University Club, in connection with the American Society of Zoologists. W. O. C. members and their friends will be seated together. An informal reception and smoker will be held in the Laboratory of Ornithology of the Museum on Saturday evening, between the hours of 7:00 and 10:00 P. M., when an opportunity will be had to examine the study collection of birds. A Wilsoniana Exhibit will be a feature of this meeting, and is being arranged for by the Local Committee. Contributions to this Exhibit are solicited. Since the first session convenes so short a time before the luncheon and dinner the Local Committee is requesting that attending members send word to the Chairman (Mr. Todd, at the Carnegie Museum) a few days in advance of their arrival; otherwise the Committee will be very seriously handicapped in making arrangements.

Railroad Rates. There will be favorable railroad rates in effect for attendance at this meeting. Practically all railroads have granted a rate of one and a third fare for a round trip ticket from all points to Pittsburgh, on the Certificate Plan. Purchase a first-class *one-way* ticket to Pittsburgh, being sure to get a certificate receipt from the Agent endorsed, "For the American Association for the Advancement of Science and Associated Societies". Upon arrival in Pittsburgh this certificate must be deposited at the Association Headquarters for validation. It must be reclaimed by the owner before purchasing the return ticket, which may then be purchased for one-third of the one-way fare. We undertsand that there will be reductions also in the Pullman fares. Consult your ticket agent early on all these points in order to give him time to verify any uncertain matters.

Secretary Hicks has been at work on the program for many weeks, and there is assurance of a program to justify your going to inconvenience, if necessary, to

attend. Besides our own meeting the week following will be occupied by the meetings of many other societies in all the sciences—usually from thirty to forty scientific societies have from one to three days of programs of papers showing the advances during the year in all scientific fields. Those who have never visited Pittsburgh should allow some time for visiting a few of the great industrial plants which have made that city famous and rich.

The Recent Chicago Meeting of the American Ornithologists' Union seemed to be a marked success in such important matters as attendance and program. The program listed sixty titles, most of which were presented. There were a number of exceptionally interesting and important field studies. We will not attempt to name any of these, for we were unable to hear all, owing to the fact that two sessions were held concurrently on Wednesday.

Not listed on the program at all was an informal talk on Wednesday by Mr. Jay N. Darling, Chief of the U. S. Bureau of Biological Survey. Mr. Darling stated that the two present objectives of the Survey were life history studies and the restoration of environment. He remarked that he left to his staff the job of promoting the life history studies, while he undertook the work of promoting restoration of environment, especially for the purposes of water fowl conservation.

Mr. Darling also referred to the recent reorganization* of the Survey for the purpose of more effectively carrying on the work. Under the new plan much of the work, especially research, is to be organized on a regional basis. For instance, there will be a regional headquarters in the Rocky Mountain area, another in the Great Plains area, the Great Lakes area, etc. The operation of the Survey under the new plan will be watched with much interest by many. Only a trial can determine success or failure. It is hoped that the Survey will put out a circular showing in detail what the new plan is, and what its objectives are. We do further hope that by the new arrangement more time will be found for investigation—that the resources of the Survey will not be exhausted in law enforcement and administrative effort; and that funds may be available for the publication of the results of the researches.

The fiasco of the 1934 water fowl hunting regulations was explained by Mr. Darling as due to the apathy of the conservationists. He said that when hunting enthusiasts outnumber the conservationists 50 to 1 at the public hearings on the regulations there can be only one outcome. While this is probably true, it excuses neither those who wish to secure excessive killing privileges nor those who are charged with the protection of the game supply. It is a lamentable fact that conservationists are poorly organized. Yet we understand that the one great institution in the country into which conservationists have poured their funds was not represented at the June hearings on the water fowl hunting regulations.

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*_Science_ (for Oct. 5, 1934, p. 308) states that the U. S. Biological Survey has now been reorganized into the following six divisions: 1) Division of Administration, 2) Division of Public Relations, 3) Division of Wild Life Research, 4) Division of Game Management, 5) Division of Land Acquisition, and 6) Division of Migratory Water Fowl Program. It is here stated that the work of the former Division of Biological Investigations is to be reorganized on some sort of a regional plan, making contact where possible with universities and similar institutions.

GENERAL NOTES

Conducted by M. H. Swenk

Notes from Union County, South Dakota.—During the spring of 1934, several rather uncommon birds were seen in Union County, South Dakota. The Turkey Vulture was seen on one occasion near the Big Sioux River. The Red-bellied Woodpecker and the Prothonotary Warbler were also found in the same area. The most interesting find, however, was a Northern Parula Warbler. I believe that this is the first record of that species from this corner of South Dakota.—Wm. Youngworth, *Sioux City, Iowa.*

The First Nesting Record of the Eastern Savannah Sparrow for West Virginia.—On May 26, 1934, I found the nest of an Eastern Savannah Sparrow (*Passerculus sandwichensis savanna*) at Oglebay Park, which is about five miles from Wheeling, West Virginia. Previous to this time, although this species had been recorded at several places in West Virginia during the spring and summer seasons, there was no nesting record of it for this state. I believe this extends the breeding range of the bird several hundred miles farther southward. The field where I found the nest has an elevation of approximately 1,250 feet above sea level, and is one of the highest points in the immediate vicinity. Parts of the West Virginia Panhandle, which includes the region where the nest was found, are in the Upper Austral zone, while other parts are in the Transition zone. The nest contained five eggs, one of which was more brilliantly colored than the others. Photographs of the nest were made.—Thos. E. Shields, *Wheeling, W. Va.*

Florida Gallinule in Lewis County, West Virginia.—In view of the fact that published records for the Florida Gallinule (*Gallinula chloropus cachinnans*) in West Virginia are very scarce, the following observations may be of interest.

On July 24, 1934, while walking with a group of nature students along the West Fork of the Monongahela River, near Jackson's Mill, Lewis County, West Virginia, I noticed an unusual-looking bird entering a small patch of weeds on the bank of the river. We surrounded the patch, and succeeded in driving out an adult Florida Gallinule. The red frontal plate was very noticeable, and the red on the legs showed up plainly. The bird very quickly hid in a larger thicket, and we did not see it again at that time. Near the same place, on July 31, a Florida Gallinule, perhaps the same individual, was seen by another bird group. This time the bird was swimming, the red frontal plate serving to identify it. When we tried to get closer it dived, and we were unable to see it again.—Maurice Brooks, *French Creek, W. Va.*

Ruffed Grouse and Hawk Survival.—The article "A Cross Country Hawk Census" by Margaret Morse Nice (Wilson Bulletin, June, 1934) interested me. I spent the winter of 1897-98 in Vancouver, British Columbia, and the people out there were worrying about the extermination of Ruffed Grouse before the birds had even begun to be as wise and wary as they are here. They were so tame that I was told not to shoot until I saw them stretching their necks. This phase had been passed in Massachusetts fifty years ago. A sitting shot was a rarity even then, and now they are so wild and cunning in this district that after a veritable bombardment in October the farmers still complain about them eating the blossom buds on the apple trees.

The Ruffed Grouse is often called "Fool Hen" in the Far West, and obviously there is a question of how near to extermination they came before all the fools were killed off. M. M. Nice says there are more hawks in England than in New England; but of course the English birds will be much wiser, and I think the danger of our hawks being exterminated must be very small. To me, a boy with a gun is at least as much a part of nature as is a hawk. "So careful of the type she seems, so careless of the single life."—WILLIAM P. HAINSWORTH, *North Andover, Mass.*

Baird's Sparrow at Home.—Mr. E. T. Judd's south pasture in the Big Coulee near Cando, Towner County, North Dakota, furnished an ideal summer home for the rather poorly known Baird's Sparrow (*Ammodramus bairdi*). It was here in June, 1934, that the writer found a fine colony of these sparrows and decided that there were no less than twenty-five pairs of them living in close harmony with their near neighbors. These neighbors consisted of dozens of pairs of Savannah Sparrows, Clay-colored Sparrows, Western Meadowlarks, Chestnut-collared Longspurs, Greater Prairie Chickens, and several species of ducks. This same pasture is reported to be also the home of that most retiring of prairie birds, the Sprague's Pipit. However, I had come too early to the Cando region and the pipits, if they had arrived, were not heard singing, and thus were not added to the bird list. Baird's Sparrow is an interesting species, because of the long period of time that it remained little known. This was mainly due to its close likeness in flight, appearance, and nesting habits to the Savannah Sparrow. The song is quite distinctive, but out on the prairie there are many birds singing at once and it could easily remain undistinguished. I found one unfinished nest and knew that the birds were actually nesting in this spot. A hurried vacation found me leaving Mr. Judd's kind hospitality and his big south pasture, where one could well spend weeks observing the many species of prairie birds.—WM. YOUNGWORTH, *Sioux City, Iowa.*

The Western Blue Grosbeak in Iowa.—During the past two years I have seen the Western Blue Grosbeak (*Guiraca caerulea interfusa*) on three or four occasions near Sioux City, Iowa. However, a specimen record was never made during this time. On June 23, 1934, I found a pair of the grosbeaks two and one-half miles north of Sioux City on the J. W. and J. A. Sturtevant farm, which is located on the Big Sioux River, in Plymouth County, Iowa. The birds were located in a scattered group of bur oak trees, which is their favorite habitat. I disliked to collect the bird so late in the season, and yet I wanted to establish the status of the species in Iowa, and therefore took only the male bird. According to Mr. Philip A. DuMont, no specimens have ever been taken in Iowa. I have made many early morning trips in search of the Blue Grosbeak in Iowa, and feel that such trips will in the future bring to light the summer residence of two other species of western birds. These are the Lazuli Bunting, of which I have one sight record, and the Black-headed Grosbeak. Both of these birds have been found breeding in Yankton County, South Dakota, which is about fifty miles from Sioux City, and since we have the identical type of habitat here at Sioux City, I think the birds eventually will be found breeding in northwestern Iowa.—WM. YOUNGWORTH, *Sioux City, Iowa.*

Nesting of the Kentucky Warbler in Butler County, Ohio.—For years I have suspected the Kentucky Warbler (*Oporornis formosus*) as nesting in Butler County, for on different occasions I have seen these birds during the breeding

season. Determined to find a nest of this species, Frank Harbaum and myself started on the morning of May 27, 1934, to a large woods north of Oxford. On entering this locality we observed a pair of Kentucky Warblers, but no nest was found. After about five hours of watching and walking, a female was flushed from its nest on the ground. We observed this female bird for several minutes with our glasses. The male bird was not seen. The nest was placed in a clump of leaves at the base of a small elm sapling. The nest was a bulky affair. The outside was composed of leaves and small weed stems and it was lined with horse hair. It contained two warbler eggs and one egg of the Cowbird. This warbler is a master at concealing its nest, which fact I think accounts for their nests never before having been found in this county.—CLARK K. LLOYD, *Oxford, Ohio.*

Some Bird Observations in Howard County, Missouri.—Black Rail (*Creciscus jamaicensis stoddardi*). At about four o'clock on May 1, 1933, a Black Rail was captured alive on the Central College campus, by Miss Seria Rogers. This represents the third record of this species in Missouri, and the only record since 1907. The fact that it was found in such an unusual place as a college campus is partly explained by the fact that on the preceding day there had been a severe wind storm, while at noon on May 1 there was a hard hail storm; however, the bird seemed in perfect condition. I had the pleasure of keeping it over night and during that time it seemed unusually tame. The next day it was sent to the University of Iowa, where it was mounted for the Central College Museum.

Eastern Solitary Sandpiper (*Tringa solitaria solitaria*). On July 8, 1932, while going around a lake about three miles from Fayette, Mr. Tom Baskett and I were surprised to notice a Solitary Sandpiper a few feet in front of us. On July 15, we again returned to observe four Solitary Sandpipers, and on July 16, one male was taken. They were probably exceptionally early migrants.

Blue Grosbeak (*Guiraca caerulea* subsp.). On May 14, 1932, Mr. Baskett and I observed a male Blue Grosbeak. So far as we have been able to determine, this represents the first record for this species in Howard County. On August 8, 1932, Mr. Baskett and I found a nest of this species, containing well advanced young. The nest was located in a sapling elm, about fifteen feet above the ground.

I first observed this species in 1933, on May 7, and on the following July 13 I found two Blue Grosbeak nests. One contained three grosbeak eggs and one egg of the Cowbird, the other four grosbeak eggs. On July 14, I again observed the nests, but their contents remained the same as on the preceding day. On this date, however, I destroyed the Cowbird's egg in order to keep the young Cowbird from crowding the young grosbeaks out of the nest when the eggs hatched. I again returned on July 17 to find that the nest that had contained the Cowbird egg on the 13th then contained two young grosbeaks and an unhatched egg, while the other nest was occupied by only three young grosbeaks, the other young one being found dead on the ground under the nest. I also found another nest on July 17, that contained young almost ready to fly. On July 20 the egg in the first nest was still unhatched, but the other two young were very healthy and the young had left the other two nests. All three nests were within an eighth of a mile of each other, along a roadside. Although all three nests found in 1933 were fairly close together, the number of Blue Grosbeaks is increasing rapidly

throughout this vicinity. If this species keeps increasing at its present rate, it will not be long before it may be considered as a common summer resident here. These data should go far in proving the rapid spread of this species northward.—WILLIAM JENNER, *Fayette, Mo.*

Eastern Goshawk Flights in West Virginia.—One of the interesting features of *Bird-Lore's* Christmas Bird Census for 1933 (*Bird-Lore*, Jan.-Feb., 1934) was the scarcity of observations of the Eastern Goshawk (*Astur atricapillus atricapillus*). In view of the fact that the seven-year cycle since the great goshawk flight of 1926-27 was completed during the 1933-34 season, this seemed noteworthy, and it may be of interest to record that West Virginia did have an extended goshawk flight during the latter season.

For purposes of camparison, I quote from my 1926-27 notes on this species:

"First observed on November 2, 1926, when a neighbor woman shot a female goshawk while it was raiding her flock of chickens. During November and December, 1926, seven dead specimens came under my observation, all taken in Upshur County, West Virginia. I observed the species almost every day, specimens being taken in Lewis, Harrison, Barbour, and Monongalia Counties, and seen in a number of others. Three were captured alive by state trappers in pole traps at French Creek. One individual attacked a full-grown Wild Turkey at the State Game Farm at French Creek. The species was common throughout the winter, and was last seen on March 20, 1927."

Notes for 1933-34 summarize as follows:

"First observed near top of Cranberry Mountain, Pocahontas County, October 15, 1933. Two individuals seen that day, one flying over Big Glade (WILSON BULLETIN, March, 1934, page 65). One seen at French Creek, Upshur County, October 17. A dead specimen brought in by one of my students on October 20. Fairly common in Upshur County during November and December. Individuals seen in Barbour and Harrison Counties. Species not seen during January and February, but an individual observed March 7, at French Creek. Seen in Upshur County, March 9, 13, 14, 16, 20, 23, and 29, and April 2; the latter being last one seen."

From these notes it may be seen that during the normal winter of 1926-27 the birds wintered in Central West Virginia, but that during the excessively cold 1933-34 winter they moved out, presumably farther south, since they reappeared in March. Not nearly so many individuals were seen during the latter flight as during the former, nor were so many poultry depredations reported. There was, however, a large 1933-34 flight in Central West Virginia, more individuals being seen than in all the intervening years since 1926-27.—MAURICE BROOKS, *French Creek, W. Va.*

Winter Birds of the Mississippi Gulf Coast.—During February of 1934, Mr. Charles F. Walker and the writer spent several days (February 12 to 16) in field work along the Mississippi Gulf Coast. As little has been recorded of the birds of southern Mississippi, a summary is made of the forms observed. The daily lists of species were 50, 58, 61, 66, and 60. The total list of species was 98, and the total number of individuals counted was 10,701.

Because of other field work being done, it seems certain that many species present were missed. However, the numbers listed probably give a fair picture of the relative abundance of most of the species observed. From headquarters at a camp in the long-leaf pine woods, six miles north of Biloxi, trips were made

to inland portions of Harrison and Jackson Counties, to the large Pascagoula River Swamp, and along the gulf shore from Pascagoula to Bay St. Louis.

For the sake of brevity, only the common names are used, following the nomenclature of the 1931 A. O. U. Check-List. No collections were made to determine subspecific forms present, the form listed being the one probable from known distributional data. The list, with the number of individuals checked for each species, is as follows: Horned Grebe, 1; Pied-billed Grebe, 1; Eastern Brown Pelican, 41; Double-crested Cormorant, 6; Great Blue Hehon, 3; Louisiana Heron, 1; Black-crowned Night Heron, 1; American Bittern, 1; Common Mallard, 6; Gadwall, 65; American Pintail, 1; Lesser Scaup Duck, 12; Red-breasted Merganser, 22; Turkey Vulture, 32; Black Vulture, 105; Sharp-shinned Hawk, 1; Cooper's Hawk, 3; Eastern Red-tailed Hawk, 1; Florida (and Northern?) Red-shouldered Hawk, 9; Marsh Hawk, 3; Eastern Pigeon Hawk, 6; Eastern (and Little?) Sparrow Hawk, 31; Eastern Turkey, 1; Yellow Rail, 2; Killdeer, 27; Ruddy Turnstone, 6; Sanderling, 312; Herring Gull, 29; Ring-billed Gull, 346; Laughing Gull, 186; Bonaparte's Gull, 2; Forster's Tern, 8; Common Tern, 1; Royal Tern, 127; Caspian Tern, 1; Black Tern, 2; Black Skimmer, 382; Eastern Mourning Dove, 177; Southern Screech Owl, 3; Florida Barred Owl, 3; Eastern Belted Kingfisher, 7; Southern (and Northern?) Flicker, 51; Southern Pileated Woodpecker, 8; Red-bellied Woodpecker, 28; Red-headed Woodpecker, 3; Yellow-bellied Sapsucker, 15; Southern Hairy Woodpecker, 3; Southern Downy Woodpecker, 2; Red-cockaded Woodpecker, 11; Eastern Phoebe, 29; Tree Swallow, 42; Florida Blue Jay, 53; Southern Crow, 56; Fish Crow, 62; Carolina Chickadee, 25; Tufted Titmouse, 34; Florida Nuthatch, 2; Brown-headed Nuthatch, 93; Brown Creeper, 1; Eastern House Wren, 2; Eastern Winter Wren, 2; Carolina Wren, 6; Prairie Marsh Wren, 1; Eastern Mockingbird, 78; Brown Thrasher, 20; Northern (and Southern) Robin, 4,570; Eastern Hermit Thrush, 36; Eastern Bluebird, 389; Blue-grey Gnatcatcher, 2; Eastern Golden-crowned Kinglet, 6; Eastern Ruby-crowned Kinglet, 84; American Pipit, 24; Cedar Waxwing, 127; Loggerhead (and Migrant) Shrike, 66; Blue-headed Vireo, 3; Myrtle Warbler, 96; Northern Pine Warbler, 212; Yellow (?) Palm Warbler, 76; Southern Meadowlark, 224; Eastern (and Gulf Coast) Redwing, 372; Rusty Blackbird, 32; Boat-tailed Grackle, 78; Bronzed and Florida (and Purple?) Grackle, 954; Eastern Cowbird, 184; Louisiana (or Eastern?) Cardinal, 118; Eastern Goldfinch, 236; Red-eyed Towhee, 19; Eastern Savannah Sparrow, 62; Eastern Grasshopper Sparrow, 2; Eastern Vesper Sparrow, 32; Slate-colored Junco, 2; Eastern Chipping Sparrow, 31; Eastern Field Sparrow, 26; White-crowned Sparrow, 3; White-throated Sparrow, 37; Eastern Fox Sparrow, 5; Swamp Sparrow, 6; and Mississippi Song Sparrow, 12.—Lawrence E. Hicks, *Columbus, Ohio.*

A Close Up of the Cardinal.—Last summer, 1933, we had the same pair of Cardinals that has been with us for several years, winter and summer. They are very tame and come to the feeding station whenever they are hungry and food is scarce elsewhere, but birds generally get their own food when possible. In the summer of 1932 they first nested in the yard of a neighbor to the east of us, in a dense shrub, but cats or Blue Jays destroyed the nest and the eggs were thrown out on the ground. They then built in the yard west of ours, about eight feet up in a mulberry tree, where sprouts grew upright, making a perfect nesting site. But when the young birds were beginning to feather, a pair of Blue Jays tried to do away with them. The brave parents fought them off in a terrific

battle, to come out the victors, although the birds were barely saved. The nest was upset and the young clung to it for dear life, but I climbed on top of the step ladder and righted the nest and birds, while the parents sat in the tree near by. So they lived and left the nest in due time. The parents stayed as usual through the winter.

Last spring (1933) they first nested in a Colorado Spruce, about three feet from the ground. When the mother was nesting a violent storm came one night and all but wrecked the nest, but the brave mother held fast through it all, although trees were bent almost to the ground and havoc wrought every place. I was sure that they could not survive, but at dawn I went out to see and they were safe and sound. But a cat was under the tree, ready to spring upon the mother which had fought through. That cat mysteriously disappeared for some reason, forthwith!

The next nest I thought was in the neighboring yard, but when cleaning the yard this spring I found it here in another thick spruce about four feet up. After the second brood was out of the nest they were all over the yard, begging for food, and the father was still feeding them while the mother was brooding for the third time in a clump of *Aralia spinosa* just outside the dining room window, about eight feet up—one of the best nesting sites one could imagine, as cats and squirrels cannot get through the thorny plants and leaves. We watched this nest of birds from the inside of the room through the window. Since Cardinals are largely seed eaters, I wondered what they would feed the young. Have others seen them feed the young at close range? They evidently fed them many soft-bodied insects of various kinds. I noticed them standing on the edge of the nest time and again, apparently with nothing in their bills, but all at once food appeared in the bill and the young were fed. It seemed to me to come from regurgitation, for they would produce this food for each of the three birds before they left the nest. The mother sat on the nest most of the time, as the father was busy with the other insistently hungry brood of three, and followed them about to keep them from danger. He tried to "fill the bill" as best he could, while his wife was attending to home duties. She can sing as well as the male, but not in the same way nor so often. She often sang when brooding on the nest. She generally sang when excited and often just before she left the nest. I have noticed other birds doing the same thing, that is singing when excited. The Carolina Wren does this, and a different song. He sings two, three, or four notes, according to conditions about him. He says "*whittle-y, whittle-y, whittle-y*", or, as we Quakers like to say, "*Whittier, Whittier, Whittier*", but sometimes he says "*Whittle, whittle, whittle*", and I have heard him say not "*teakettle*" as some say, but with another syllable in the word, as "*Te-a-kettle, te-a-kettle, te-a-kettle*", repeated three or four times, loud and bold as if he were as big as a jay.

I did not know the Cardinal nested three times in a season until these birds thus nested thrice in our yard. I banded the third brood of young and am hoping to see some of them this summer, although I have not seen any of the second and third broods since fall. But the parents come often to feed and get water. They awaken me each morning with their song. They sing twice as much if I answer them each time they whistle. When other birds, as English Sparrows and Starlings, bother them while eating, I can scare them away without disturbing the Cardinals. They seem to know.—Mrs. Horace P. Cook, *Anderson, Ind.*

Observations of the Ferruginous Rough-leg in Iowa.—The recorded occurrences of the Ferruginous Rough-leg (*Buteo regalis*) in Iowa seem to be sufficiently scarce to warrant publication of these observations made by the writer during the spring of 1934.

On March 29, two birds were seen two miles southwest of Perry, Dallas County. One was noticeably larger than the other, apparently indicating a mated pair. Both had light gray tails, which were dark terminally. The backs were rusty, and the underparts were light. The rusty tarsal feathering was noted on one of the birds as it perched near by. The black spot on the under side of the wing, diagnostic of a Rough-leg, was evident in both individuals. Another pair was seen at Long Pond, Dallas County, a few minutes later. This is five or six miles west of where the first pair was noted, and certainly was a different pair. On April 9, a single bird was seen two miles northeast of Milford, Dickinson County. The spot on the under-surface of the wing, the rusty back, gray tail with dark terminal band, all were noted. A single bird was seen on April 11, two miles southwest of Round Lake, Clay County. This bird was seen to advantage as it perched on a telephone post near by. It probably was a male. On April 17, another, probably a female, was observed at Four Mile Lake, Emmet County. The underparts of this bird were darker, except on the throat, and the other field characters were indicative of this species.—Philip A. DuMont, *Des Moines, Iowa.*

Observations on the Chimney Swift.—For several seasons I have been especially interested in the nesting of the Chimney Swift (*Chaetura pelagica*). On two occasions I have lowered myself down a chimney in order to obtain closer observation of the nest and young birds. On the first occasion I found the nest about twenty feet below the top of the chimney. The nest was composed of small, dry twigs, a seven-inch length of string, a piece of straw, and three inches of bee wire. At the beginning of the nesting season I had placed three dry twigs on the top of a ledge in the chimney, allowing them to protrude about an inch beyond the edge. To one of the twigs I attached the three-inch bit of wire, and I painted the ends of the two remaining twigs black. I was somewhat surprised, however, to find later that the birds had used the wire and one of the twigs in the construction of the nest. The string used in nest building had also been placed by me in the chimney well. The straw is not accounted for. All the pieces in the nest were glued together with a substance secreted by the builders. Three nestlings occupied the nest this season, and all were successfully reared. Later in the season the broken nest was found at the bottom of the chimney well.

In July, 1934, I located another nest thirty-five feet below the top of the chimney. This family consisted of six birds, all of which were captured; four were banded and released. Two of the older nestlings died upon being taken to the top of the chimney. I believe this was caused by the heat. At the top of the chimney the air was excessively warm. The air at the level of the nest was cool. I expect to continue my observations of the Chimney Swift next season, and would be glad to correspond with others who are interested in this species.—Lawrence E. Hunter, *Dallas City, Ill.*

Changes in the Habits of the Prairie Chicken.—In a former note the writer mentioned the habit of prairie-nesting birds of resting in the shade of fence posts during extremely hot weather. This last June (1934), while in western North Dakota, Prairie Chickens and Sharp-tailed Grouse were found on numerous

occasions resting behind telephone poles along the country roads. The average pole casts a shadow just about as wide as the width of the sitting bird and here they were found during the worst heat of the day. Several times as many as eight and ten birds would be found in the shade of consecutive poles, and although they were located only a short distance from a slowly moving car, they would not budge from their places.

Below Sioux City, Iowa, is a flat area known as the "Hornick Bottoms", and here great quantities of winter wheat is planted. This region is the favorite feeding ground of migrating Golden Plover, and it was while observing these birds on several occasions, that another interesting habit of the Prairie Chicken was discovered. The wheat fields are usually of several hundreds of acres in extent, and in plowing the farmers will often miss a stretch of weed grown stubble a foot or two wide and several rods long. It is here that the wary Prairie Chicken will rest during the day, in almost assured safety, as hunters and dogs do not get out on the low green growth of new wheat in their search for game. I have flushed out birds from these narrow bands of stubble, and from the amount of droppings knew that the birds had been coming back day after day. Cottontail rabbits also use this same site for day-time resting places, showing that both birds and animals take advantage of this man-made haven.—Wm. Youngworth, *Sioux City, Iowa.*

A Snowy Heron Record for Franklin County, Indiana.—The smaller of two brothers, hoeing corn in front of my home, came rushing in as I sat writing at my desk on the morning of July 28, 1933, and told me that there was a great flock of strange, white birds approaching from the west. However, they had reached the cornfield almost by the time the boy got to me, and by the time I had snatched a pair of field glasses and got outside they had disappeared beyond the woods that skirted the eastern edge of the field. The older brother informed me that he judged that there were between fifty and seventy-five of them. They were not pigeons, they were sure, nor ducks, nor geese. The smaller brother said that they were some kind of really strange birds. "What did they most resemble?" I asked. "Looked like a flock of 'White Shite Pokes'", the younger brother said. "White Shite Pokes"! Could it be, I wondered, that the boys had seen a flock of Snowy Herons? I had never seen any, nor had I ever heard of any being seen in my immediate neighborhood.

Along towards evening on August 1, 1933, I went up on Right Hand Fork, a meandering, rocky stream that lies northeast of my home, to observe some Spotted Sandpipers (*Actitis macularia*) that I had seen there while on a hurried trip some days before. I reached the stream some distance above where I had seen the sandpipers, and not yet having encountered them, I was watching for a moment through my field glasses two adult Little Blue Herons (*Florida caerulea*). Both took wing at once, and as I lowered my glasses I chanced to glimpse a white object near the top of a small, black hickory that stood on the right bank of the stream. My first thought, unusual as it may seem, was that the object was an old white turkey belonging to a farmstead a short way behind. I saw my mistake at once. I trained the glasses on the bird and noted immediately the yellow feet, black legs, and dark bill, also the plumes on the back of the head. It was a Snowy Heron (*Egretta thula thula*). It was not shy, for to begin with I was not more than forty feet away, and it allowed me another ten-foot approach before it flew, circled not higher than thirty feet over my head a half dozen times, flew across the creek and alighted in the top of a taller hickory situated on a bluff.

I studied it some more on its new perch and then, wishing to see it in flight again, I tossed several stones into the shrubbery at the base of the tree. A number of times I threw before it flew, and then it circled four times above me, straightened out and disappeared upstream, back towards the woods. I wondered after seeing this Snowy Heron if it was not one of the flock that the boys had seen on July 28. I made several inquiries afterward, and found one boy who had seen a single Snowy Heron near where I had seen mine. It was probably the same one, as he had seen it two days later.—GRANT HENDERSON, *Route 6, Greensburg, Ind.*

The Turkey Vulture in Southern Arizona.—A recent article (WILSON BULLETIN, XLVI, pp. 93-95, 1934) by Margaret Morse Nice, stating that only three Turkey Vultures (*Cathartes aura septentrionalis*) were seen on a motor trip of 678 miles in Arizona proved a distinct surprise to me. She does not give the route travelled, but judging from the time of year she started I would guess that she covered the cooler, northern part of the state. Apparently here the Turkey Vulture is not common. I feel that she would have encountered many more had she traversed the hot, southern portion of Arizona.

My observations, confined to the Tucson area, are as follows: During the summer of 1932 I made thirteen weekly trips from Tucson to Oracle, a distance of thirty-five miles. The highway leads through practically nothing but Lower Sonoran desert, the elevation being about 2,400 feet at Tucson and reaching 4,500 feet at Oracle, where the Upper Sonoran oak belt begins.

Turkey Vultures were counted only on the morning, out-going trips, a total of ninety-three birds being recorded. The average was about seven birds per trip, making one bird to each five miles. The largest number seen was eighteen birds on August 28, the smallest one bird on August 21 and September 4. It is very evident that the variation was extreme. A person who drove by on August 21 would have reached a very erroneous conclusion in regard to the actual distribution of these birds.

The food available along the highway consisted chiefly of jack rabbits, round-tailed ground squirrels, Texas Nighthawks, and a few small birds, all of which had probably been killed by passing automobiles.

Observations for 1933 and 1934 were not so extensive. However, from my home in the Rillito Valley, I could look out almost any time of the day during the summer months and count four or five Turkey Vultures circling about. Binoculars would often reveal several more in the distance. A few times I have noted as many as twenty birds over one spot. On May 30, 1933, ten Turkey Vultures were seen on a trip to Madera Canyon, Santa Rita Mountains, about thirty-five miles south of Tucson.

So far as I can see, in the Tucson area, there has been no change in the status of the Turkey Vulture since 1931.—ANDERS H. ANDERSON, *Route 2, Box 105-C, Tucson, Ariz.*

ORNITHOLOGICAL LITERATURE

CHECK-LIST OF BIRDS OF THE WORLD. VOLUME II. By James Lee Peters. Harvard University Press, Cambridge, Mass., 1934. Pp. i-xvii+1-401. Price, $4.00.

The second volume of this notable work appeared in the middle of June, there being an interval of about two and a half years between the first and second volumes. The author reports that his work on the second volume was completed early in 1933. The plan of this work follows that of Volume I (which was announced in the WILSON BULLETIN for December, 1931, XLIII, p. 320). Volume II treats of the Galliformes, Gruiformes, Diatrymiformes, and Charadriiformes (grouse, quail, cranes, rails, sandpipers, plovers, gulls, terns, and auks), thus including a considerable number of the "game birds". In the list is given the scientific name, source of original description, and world distribution. Vernacular specific names are omitted, for the reason that they have only national use. Vernacular family names are added in the Table of Contents, but the author remarks in the Preface that, "inventing English names for birds that do not have them is a waste of time." As this series of volumes nears completion the magnitude of it will become more apparent, and it is to be hoped that early volumes are being issued in sufficient numbers to accommodate late buyers.—T. C. S.

LES OIEAUX DE FRANCE. VOLUME II. By A. Menegaux. Published by Paul Lechevalier & Sons, 12 Rue de Tournon, Paris, VI. Pp. 450. Figs. 148. Pls. 80 (64 in color). 1934.

"The Birds of France" here appears in the second volume. This volume treats of the grebes, auks, petrels, terns, gulls, plovers, sandpipers, ducks, geese, cormorants, pelicans, storks, herons, cranes, and rails—the water birds. The volume is arranged in two parts. Part I is the systematic text, and covers about 300 pages. It includes 130 line drawings to illustrate various morphological features, e. g., head, tail, wing, foot, bill, etc. Besides this systematic treatmnet of the water birds of France, there is a very full treatment of the parasites found on the birds of the list. Eighteen genera, including 194 species, of parasites are described, all but three of the species belonging to the Mallophaga. A list showing the distribution of the parasites on the bird species is also given. There are line drawings (eighteen in number) to illustrate practically all of the genera of parasites.

Pare II is called the Atlas, which contains the pictures. There are eighty full page plates, sixty-four of which are in color. Each plate is accompanied with a page of descriptive text matter, including plumage, measurements, food habits, and distribution. Each plate illustrates one species, but both sexes are shown in cases where they differ. A useful paragraph in the text for each species gives the vernacular names in the French, German, English, Spanish, Italian, and Portugeese languages.

This volume on the water birds of France follows the same general plan as in the earlier volume on the hawks, grouse, pigeons, woodpeckers, etc. (reviewed in the WILSON BULLETIN, June, 1933, XLV, p. 91). In many respects the second volume impresses us as being an improvement on the first volume of the series. We do not find a statement as to the price of Volume II, but Volume I was priced at 50 francs. Volume III is projected to treat the song birds of France. These volumes are of uniform pocket size (4½x6¼ inches), and should be most helpful to bird students travelling in Europe.—T. C. S.

A Field Guide to the Birds, Giving Field Marks of All Species Found in Eastern North America. By Roger Tory Peterson. Pp. i-xxiv+1-167. 1934. Houghton, Mifflin Co., New York. Price, $2.75.

This handbook is intended as a popular manual for "birding", rather than as a reference book in ornithology; and as such it admirably fulfills its purpose, and will be found helpful by all amateurs who do field work. However, the author's failure to fully treat the birds of the Middle West is noticeable, and must be taken into account in this region. As examples of subspecies which are found in the Middle West, not included by the author, may be mentioned, the Lesser Loon (*G. i. elasson*), the Northern Bald Eagle (*H. l. alascanus*), the Western House Wren (*T. a. parkmani*), the Bendire's Crossbill (*L. c. bendirei*), and the Dakota Song Sparrow (*M. m. juddi*). In some of these cases only the species are treated, doubtless on the assumption that the subspecies are not distinguishable in the field. However, the author claims ability to distinguish in the field "typical individuals" of the Newfoundland Crossbill from the Red Crossbill. These omissions would not be worth mentioning were it not for the fact that subspecies along the Atlantic coast seem to be pretty well covered. The utility of the book as a field guide is not much impaired by such omissions because the student in the field is not much concerned with subspecies; if he is, he collects.

The author attempts to describe the bird as it may be recognized in the field. Descriptive facts not useful in field identification are omitted. However, a brief statement of the range of each form listed would have added much to the book's value for field purposes, without unduly adding to its bulk. Too little attention is given to the matter of range by many writers. Students might often be saved from error had they better knowledge of the usual distribution of a species or subspecies in question.

The illustrations form an important feature of the book. There are four color plates and thirty-two plates in black and white, each showing the portraits of numerous species. Most of the portraits are in the form of diagrams emphasizing the field marks.—L. W. W.

Bird City. By E. A. McIlhenny. Pp. 1-203. Many photographs. 1934. Price, $3.00 (E. A. McIlhenny, Avery Island, La.).

The story of the wonderful man-made "Bird City" is presented in the form of a conversation between the author and his two grandsons during a day spent together in the blinds. It tells of the routine of tragedy in the daily existence of the wild things of the swamps—with many examples of the intricate mechanism in the balance of nature. One striking fact recorded is the case of a brood of five half-grown Florida Gallinules caring for and feeding a second brood of seven brother-sister young, just hatched, while the parents of both were in the nearby rushes preparing a nest for a third brood! Eventually both older broods will help care for the youngest ones. The account of how the young herons are taught to fly is an interesting one. The author treats the habits of flying as wholly acquired by a learning process.

Not by any means the least interesting feature of this book is the story of how "Bird City" came to be. At the time of Mr. McIlhenny's boyhood practically all of the herons and egrets had been driven from Avery Island by the plume hunters. About the year 1893 he located two nests of the Snowy Heron, each with four young. These he took home and reared in large cages. They became so tame that they followed him about and ate from his hand. But that

fall, at migration time, the eight birds left. Next year six of the eight returned, though one later deserted. Four of the remaining five mated and nested on his premises. From the two nests eight young were hatched and raised. The young and old were tamed as in the preceding year. On November 17 all of the thirteen healthy birds migrated. In the succeeding spring all of the thirteen birds returned—in two different groups. In this third season five nests were built and twenty young ones were raised. By 1908 the colony had grown to 10,000 birds, including various other species of the heron kind. By 1912 there were 120,000. Since that year the population of the "City" has remained at about 100,000, and a good deal of labor is required in providing for the needs of so many.

Early in the history of the colony the Little Blue Herons and the Louisiana Herons voluntarily joined it. When any of these birds built a nest and laid a full clutch of eggs Mr. McIlhenny removed the eggs and substituted a clutch of Snowy Heron eggs. The foster parents reared a brood of Snowy Herons, while the Snowy Herons, which were robbed, at once laid another set of eggs. Thus the rarer Snowy Herons increased more rapidly than if left to their own devices. It It has been necessary for Mr. McIlhenny to furnish not only a great deal of food for his birds (especially for his winter visitors), but he has found it necessary also to furnish nest material. Thus, each year he hauls from twenty-five to thirty-five truck loads of twigs (size of a lead pencil, or a little larger) to be dumped in piles near the rookery. These sticks are all used up by the birds in the construction of their nests. It is an interesting story, and well told.

And, as Mr. McIlhenny told the story of "Bird City" to his grandchildren, so we think that many other children would be fascinated by having the same story read to them from this book.—T. C. S.

The Bird Fauna of the Galapagos Islands in Relation to Species Formation. By Harry S. Swarth. Biol. Reviews, IX, No. 2, April, 1934, pp. 213-234.

The author visited the Galapagos Islands in 1932, after several years of close study of the world's collections of birds from that region. Explanation of the avifauna of this region hinges chiefly upon the history of the islands themselves. Darwin, Salvin, and Ridgway regarded the islands as of oceanic origin, through the agency of volcanic activities. Baur, Van Denburgh, and others considered that the Galapagos Islands arose by the severance of a former land connection with the American continent. Careful study of the bird life affords some evidence on this question. Mr. Swarth's studies lead him to the conclusion that the birds of the Galapagos Islands are of diverse origin—that they are "clearly not derived from the South American mainland directly to the eastward". At least one bird, the Galapagos Penguin, is an immigrant from the south, carried northward, perhaps, by the Humboldt Current. Other birds seem to be definitely related to West Indian forms. Still others have a world wide distribution. Altogether Swarth's analysis of the Galapagan avifauna leads him to the conclusion that the islands were first populated by "chance-controlled wanderers" from various directions. And, of course, this conclusion supports the theory of oceanic origin of the islands.—T. C. S.

Fighting the Insects. The Story of an Entomologist. By L. O. Howard. 1933. Pp. i-xvii+1-333. The Macmillan Co., New York. Price, $2.50.

Some justification is likely to be expected for presenting this review of a title by an entomologist, even though it may be autobiographical. It is thought to be an opportune occasion to make reference to Dr. Howard's brief contact

with the Wilson Ornithological Club, and his unfailing courtesy and magnificent simplicity. Sometime during 1915 the writer, as President of the W. O. C., wrote to Dr. Howard, then the Permanent Secretary of the American Association for the Advancement of Science, relative to the possibility of affiliation of the smaller society with the American Association. Dr. Howard was very cordial, and after some inquiry and doubtless some investigation, the matter was placed before the A. A. A. S. Council and acted upon favorably. And from 1916 to the close of Dr. Howard's Secretaryship this relation remained. When Dr. Howard retired as Secretary to become the President, influences were successful in securing a change in classification. This, however, is incidental, and another story.

The writer has a very vivid mental picture of Dr. Howard at the Columbus meeting of the American Association in 1915, so soon after the correspondence. Though we had no personal acquaintance with Dr. Howard, he was immediately recognized as he came down the hallway in short, shuffling steps, and with a cigar stub, apparently out, hanging downward between his lips. The book under discussion, which is largely biographical, fully corroborates our impressions of the man. His simplicity is shown by the pleasure with which he enjoyed various honors bestowed upon him and the frankness with which he tells about it.

In reading the book we discovered only one reference to birds. Dr. Howard was attending an Agricultural Congress in Vienna in 1907. The protection of birds was being discussed, and Dr. Howard was invited to speak. He took the ground that "by far the most important enemies of injurious insects are other insects" (p. 191), rather than birds. And he suggests that birds should be protected for sentimental reasons, rather than because of their value as insect destroyers—a view which is coming to be more and more recognized. The book is full of anecdotes, and is enjoyable reading.—T. C. S.

A Revision of North American House Wrens. By Harry C. Oberholser. Reprinted from Ohio Journ. Sci., XXXIV, No. 2, March, 1934. Pp. 86-96.

There are two features in this paper. First, Dr. Oberholser uses the specific name *domesticus* in place of *aedon*, on the supposition that Vieillot's work designating the type of the eastern race as *aedon* was not published until 1809, a year after Wilson proposed the name *domestica*. And thus by priority, if the supposition is correct, the House Wren should be known as *Troglodytes domesticus* (=*Troglodytes aedon*). The second point in the paper is the proposal of a new subspecies of House Wren for Ohio, to be known as the Ohio House Wren (*T. d. baldwini*). Specimens of both *domesticus* and *baldwini* are reported in this paper from Connecticut, Florida, Georgia, Indiana, Louisiana, Michigan, New York, Pennsylvania, Texas, Virginia, and West Virginia. The Western House Wren (*T. d. parkmani*) is still recognized and specimens are reported from the following states, among others: Indiana, Florida, Texas, Louisiana, and Michigan. That is, these states have yielded three of the three subspecies of the House Wren (at least during the non-breeding season)—from Florida to Michigan and on to Texas. It would evidently be hazardous to name the subspecies of any House Wren seen in the field within this wide range. *T. d. baldwini* and *T. d. parkmani* are also both recorded from Michigan during the breeding season; while *T. d. domesticus* is recorded from there on May 27, which very nearly falls within the breeding season. If this latter bird was migrating through Michigan and headed eastward, how may we account for this peculiar route? If it was not a migrant then Michigan may boast of three breeding subspecies of the House Wren—three

"geographical races". We can understand the desire to do justice to the efforts of early workers, even at the inconvenience of living ornithologists; but we confess to an inability to understand the occurrence of three breeding geographical races within so limited an area, even after granting the somewhat more northerly occurrence of *T. d. parkmani*, as shown by the data in this paper.—T. C. S.

THE BIRDS OF CHURCHILL, MANITOBA. By Percy A. Taverner and George Miksch Sutton. Annals Carnegie Museum, XXIII, May, 1934. Pp. 1-83. Pls. I-XIV.

One hundred and forty-two species of birds are reported, not including ten which are regarded as hypothetical. All species are well annotated, the annotations in some cases being important systematic discussions. The sequence is that of the A. O. U. Check-List, and the authors have tried to follow the nomenclature of that authority as far as possible. All birds are listed in binomial terms. In some cases the subspecies are named in the annotations, or the probabilities are discussed. In this respect we believe that this report may well be taken as a model. Mr. Taverner is "convinced that Kumlien's Gull is a distinct species and not a bybrid as is represented in the last A. O. U. 'Check-List' ". Two forms of the Horned Lark were found, *O. a. alpestris* and *O. a. hoyti*. *Hoyti* was found to be the breeding form, but individuals recognizable as *alpestris* (the latter having a more easterly range) remained to interbreed with *hoyti*. A somewhat similar condition was found to prevail with the Water-Thrushes (*Seiurus noveboracensis noveboracensis* and *S. n. notabilis*). The specimens taken at Churchill were all intermediate between these two. The senior author refers to ninety-eight specimens of these Water-Thrushes in the National Musum of Canada, which were collected throughout Canada. "White *noveboracensis* and yellow *notabilis* with their accompanying characters are scattered indiscriminately throughout the series". While some of these specimens were migrants, yet in the forty which could be regarded as breeders "practically the same confusion persists". These unprejudiced observations are made by one who is not opposed in principle to the subspecies concept, but by one who is not carried away, apparently, by a scientific fetish. The plates are reproductions of some excellent photographs both of birds and habitats. The colored frontispiece by Major Brooks shows a Hudsonian Curlew and downy young.—T. C. S.

ANNUAL REPORT OF THE HAWK AND OWL SOCIETY. Bulletin No. 4. June, 1934.

Besides the reports of officers we find on these pages reports on the present status of the hawks and owls in two states, viz., Vermont and Arizona. Printed correspondence shows a pitiful ignorance of hawks and their habits by occasional state officials. For instance, an official in the Department of Conservation of the state of Illinois is quoted as follows: "As to the killing of hawks, owls, eagles, etc, I beg to advise that all species of hawks and owls are considered predatory birds, and are not protected by the game laws." They were all alike to him. But an editorial comment shows that only six species of raptores are unprotected by the game laws of Illinois. With men of this calibre in official positions the laws are practically nullified. However, there are indications that a new day in conservation is close at hand. And as soon as a supply of trained men is available, they will be gradually placed in the state positions to administer the wild life of the country. Let us then encourage young men to take training for this work, as it is offered at Wisconsin under Leopold, at Iowa State under Errington, and at Cornell under Allen, and at other similar places when established. Other recent papers on the protection of hawks and owls are as follows: "Birds of Prey",

by Warren F. Eaton, in the Transactions of the 20th American Game Conference, 1934; "The War on Winged Predators", by William Vogt, in the American Forests, June, 1934.—T. C. S.

In Defense of Pelicans. By Ben H. Thompson. Calif. Fish and Game, Vol. 19, No. 3, July, 1933, pp. 188-192.

Again Mr. Thompson comes to the defense of the White Pelican, but this time it is in specific reply to a writer who denounced this bird as a nuisance. It is an interesting paper, and closes with the suggestion that instead of being the "worst of all" predators upon fish, it may be the "best of all", because a large part of the pelican's diet may consist of non-game fish which prey upon game fish.—T. C. S.

Bulletin of the Essex County Ornithological Club of Massachusetts. Salem, 1933. Pp. 1-56. Price, 75 cents (S. G. Emilio, 7 Winter St., Salem, Mass.).

Mr. Griscom reports on the exceptional abundance of warblers in the spring migration of 1933, comparing it with the year 1917. Those students of migration who are interested in the phenomenon of bird waves will find this paper interesting. The late Dr. C. W. Townsend discusses the predatory habits of the Northern Shrike and some winter feeding habits of the Yellow-bellied Sapsucker. The annual composite bird list is given.—T. C. S.

The Audubon Yearbook [Indiana] 1934. Published by the Indiana Audubon Society. Pp. 1-84. Numerous illustrations. Price, $1.00 (Miss Margaret R. Knox, 4030 Park Ave., Indianapolis).

Dr. Blatchley offers a plea for the preservation of the Sand Dunes of Indiana. There is also a report that 50,000 Crows were killed in the state of Indiana during the first six months of 1934. A vivid account of netting Passenger Pigeons is given by one of Indiana's pioners. There is also a paper by Mr. McAtee on "The Mutual Relations of Farms and Birds", which gives a good review of economic ornithology as exhibited on the farm. A paper by Mr. M. L. Fisher presents a digest of many questionnaires on the habits of the Starling in Indiana. Many other short papers are included in this issue of the Yearbook.—T. C. S.

Birds of the Chicago Region. By Edward R. Ford, Colin C. Sanborn, and G. Blair Coursen. Pub. jointly by the Ill. Aud. Soc. and the Chicago Acad. Sci. (Order from the latter at 2001 N. Clark St., Chicago). May, 1934. Pp. 1-63. Price, 50 cents.

This new list for the Chicago region includes 371 species and subspecies, as contrasted with 317 species listed by Woodruff in 1907. The old list was practically limited to Cook and Dupage Counties, with the northern portion of Will County (Ill.) and Lake County, Indiana. The new list covers a much wider area, including five counties in Wisconsin, seven counties in Illinois, and seven in Indiana. The annotations include a statement as to status and the migration dates.—T. C. S.

Fifty Years of Bird Migration in the Ann Arbor Region of Michigan. By Norman A. Wood and A. D. Tinker. Occasional Papers Mus. Zool., Univ. Mich., No. 280, May 21, 1934, pp. 1-56.

The authors present under this title fifty-three pages of tables showing the migration dates for 212 species and subspecies. An early and late date is given

for each year from 1906 to 1930, inclusive; an average date for these twenty-five years is also given. And with the latter there is also given an average date for the preceding twenty-five-year period, based on data published by Mr. Wood in 1906. The paper is a valuable contribution to migration data.—T. C. S.

Effect of the Introduction of Exotic Animal Forms. By Rudolph Martin Anderson. Proc. Fifth Pacific Sci. Congress, 1933, pp. 769-728. Printed by the University of Toronto Press, 1934.

Dr. Anderson herein gives a splendid brief history of the known natural and artificial introductions of exotics of all kinds. Details of various introductions throughout the world are given, and local effects are discussed. A summary of generalizations on the good and bad effects of such introductions is finally presented.—T. C. S.

Wild Life as a Profession. By Paul L. Errington, Sci. Month., XXXVIII, June, 1934, pp. 554-560.

A paper of interest to all who may be contemplating a career in the field of game management or similar work. The young man who is fond of outdoor life and the study of nature, but who sees no opportunity of going into it professionally, will find this discussion of much help. Now is the time to prepare for this new profession.—T. C. S.

Management Possibilities for Ring-necked Pheasants and Hungarian Partridges. By Lawrence E. Hicks. Proc. 27th Convention Internat. Assoc. Game, Fish, and Conserv. Commissioners. 1933.

Dr. Hicks' paper on this subject will be of interest to those who are concerned with game management.—T. C. S.

A Flushing Apparatus Devised to Save Ground Nesting Birds and Mammals during Mowing Operations. By P. F. English. Game Div. Bull. No. 2, Mich. Dept. Conservation. 1934.

In recent years much consideration has been given to the problem of the destruction of adult birds and nests by mowing machines. Several types of "flushing rods" have been designed to attach to the tongue of the machine and project laterally in front of the cutting knife. The first one became known as the Wisconsin bar. Later ones were known as the Iowa bar and the Minnesota bar. The modification here described by Dr. English may become known as the Michigan bar. In one case where 280 acres of hayfields were mowed without any kind of a flushing device, 64 per cent of the hens were killed; on another parcel of 258 acres only 33⅓ per cent of the birds were killed where a flushing device was used.—T. C. S.

The Growth of Some Young Raptorial Birds. By E. Lowell Sumner, Jr. Univ. Calif. Publ. Zool., XL, pp. 277-308, 1933. Price, 50 cents.

This statistical study is based upon three species, viz., the Pacific Horned Owl, the Barn Owl, and the Golden Eagle. Observations were made on the temperature changes, weight increase, food consumption, bone growth, and feather development.—T. C. S.

Geographical Variation in Belonopterus chiliensis (Molina). By Pierce Brodkorb. Occasional Papers Mus. Zool., Univ. Mich., No. 293, June, 1934.

Belonopterus chiliensis is a South American species which now embraces four subspecies, including one newly described by the author in this paper.—T. C. S.

For some years, beginning in 1923, Prof. O. A. Stevens, of North Dakota State College, at Fargo, has been issuing a mimeographed bulletin under the title, "North Dakota Bird Notes". It appears weekly from March to June, covering the migration season. It gathers up information from many parts of the State, and is distributed to the newspapers of the State. Prof. Stevens tells us that about seventy-five copies were distributed this year, chiefly to the newspapers. This ought to be a practical means of developing public interest in birds.

The *St. Louis Bird Club Bulletin* for May and June are at hand. The St. Louis Bird Club made an interesting experiment in placing ad cards in street cars, the cards reading, "Protect the birds. They will reward you with beauty and song." Notes on extinct birds in Missouri, migration lists, with numerous short items, fill the Bulletin.

The *Redstart* is the youngest of the local bird periodicals. It is published monthly by the Brooks Bird Club, of Wheeling, W. Va. The Editor is Mr. Thos. E. Shields. This Club has conducted an essay contest, prizes being given to the authors of ornithological essays which are judged to have the greatest merit. The *Redstart* is mimeographed and is similar in its aims and methods to other local publications which are now being issued.

"Conservation Economics" is the title of a paper by Professor Aldo Leopold in the *Journal of Forestry* (XXXII, May, 1934) in which he points out some of the disharmonies in the adjustments of the numerous conservation and relief enterprises put into operation under the "New Deal". For illustration, we quote: "There was, for example, the road crew cutting a grade along a clay bank so as to permanently roil the troutstream which another crew was improving with dams and shelters; the silvicultural crew felling the 'wolf trees' and border shrubbery needed for game food; the roadside-cleanup crew burning all the down oak fuel wood available to the fire-places being built by the recreation-ground crew; the planting crew setting pines all over the only open clover-patch available to the deer and partridges; the fire-line crew burning up all the hollow snags on a wild-life refuge, or worse yet, felling the gnarled veterans which were about the only scenic thing along a 'scenic road'. In short, the ecological and esthetic limitations of 'scientific' technology were revealed in all their nakedness." The entire paper is an instructive discussion in a very new field. Perhaps the lesson to be drawn is that the business of conservation in practice calls for a new type of trained man, and the breadth and directions of necessary training is the surprising thing. It probably means the setting up new departments in the universities for the proper training of this new profession.

The *American Midland Naturalist* for May, 1934, contains two papers each dealing exhaustively with a genus of sedges in Indiana, viz., the genera of Cyperus and Scirpus. Not only is the distribution in Indiana fully treated, but the species are illustrated with full page drawings, making identification easy in any locality. The entire July number is occupied by a scholarly report on the Amphibia of Kansas, covering 250 pages. In addition to the usual catalogue account of each species, keys are presented for adults, for tadpoles, and for eggs of the species found in that state. All of these papers are exceptionally useful.

The August number of *News from the Bird-Banders* (IX, No. 3, Museum of Vert. Zool., Berkeley, Calif.) contains a general plea for coöperation in banding work, and makes specific mention of many projects now under way in which

assistance is wanted. Mr. E. L. Sumner is reported to have evidence that a Wren-tit lived to be ten years old, at least, and belief is expressed that this is a unique record. We may call attention to a record of a ten-year-old Cardinal published by Mr. Ganier in the WILSON BULLETIN (for December, 1933). This bird has now passed its eleventh season, as later reported by Mr. Ganier.

In the *Florida Naturalist* for July R. J. Longstreet writes on Wilson's Plover in Florida—its various habits and the marks which distinguish it in the field from the Semipalmated and Piping Plovers. The October number presents a report by Dr. H. R. Mills on some rookeries in the Tampa Bay region which have recently been given warden protection. This protection has already resulted in a marked increase in the bird population. In a paper on bird banding E. W. Davis reports on the cannibalistic habits of immature Brown Pelicans.

The *Migrant* for March, 1934, contains an account of the night events in a roost consisting mainly of Starlings. The nesting of Swainson's Warbler in Tennessee is reported. In the June number we find an article by Professor Mayfield on the song of the Mockingbird. He places the Carolina Wren, Blue Jay, and Cardinal first of birds mimicked by the Mockingbird. Dr. Mayfield also announces that he is continuing his study of this problem, and would be glad to hear from others on the same subject. Benj. R. Warriner tells of a pair of Prothonotary Warblers nesting in a hornet's nest for two successive years. The number for September has an article by Harry C. Monk on the habits of the Warbling Vireo. Mr. Ganier presents a list of public and private libraries in Tennessee which contain the works of Wilson and Audubon. The *Migrant* is edited by Mr. Geo. B. Woodring, 1414 Stratton Ave., Nashville, Tenn.

The second volume of the *Nebraska Bird Review* has appeared regularly during the present year. Each issue contains one or more leading articles and many short "General Notes"; migration reports and proceedings appear occasionally. One of the most important articles is a paper by Prof. Swenk on "The Present Status of the Whooping Crane" (October, 1933). The paper gives a history of the species with particular reference to Nebraska, over the last twenty-year period. A list of specimens and sight records and maps of distribution, with bibliography, make the paper a very complete one. The important conclusion seems to be that this species is not as near extinction as many previous writers have assumed. Prof. Swenk also has another article (July, 1934) on the Carolina Paroquet as a Nebraska bird, collecting the known records of this bird through the Missouri Valley. The October number (1934) contains an important article by Messrs. DuMont and Swenk on the Canada Goose and its varieties. It is a detailed report on 404 specimens of the various forms of the Canada Goose collected in Nebraska about fifty years ago by D. H. Talbot, of Sioux City, or by his collectors, and later deposited in the Museum of the State University of Iowa. The paper is especially interesting in showing the intergradation in dimensions of the three subspecies of the Canada Goose which are involved in this study. The *Review* is published by the Nebraska Ornithologists' Union and edited by Prof. Myron H. Swenk, 1410 N. 37th St., Lincoln. The subscription rate is $1 per year.

The *Iowa Bird Life*, now completing its fourth volume, is published quarterly by the Iowa Ornithologists' Union, and edited by Mr. Fred Pierce, Winthrop, Iowa (50 cents per year outside of Iowa). It contains much local material in the form of long and short articles. About a year ago (December, 1933) it pre-

sented a useful history of extinct amateur ornithological serials published in whole or in part in Iowa—thirteen of them. The number for March, 1934, gives a list of all known published items on Iowa ornithology during the preceding year. This is a most useful service, and a very proper function for a state publication.

The *Flicker* was issued in February and May, 1934. It is the publication of the Minnesota Bird Club. Dr. Gustav Swanson is President, 3305 47th Ave., Minneapolis, Minn.

The *Snowy Egret* (Volume IX, No. 1) appeared during the summer of 1934. This number gives a history of the publication, which will be of interest to bibliographers. It contains also a list of birds seen in southern Michigan during recent years by Dr. Harry W. Hann. Two papers by Oscar McKinley Bryens and an autobiography by R. E. Olsen make up the forty-six pages of mimeographed material.

The *Inland Bird Banding News* for June, 1934 (Vol. VI, No. 2) contains a letter from Mr. Berner, at Jamestown, N. D., which is interesting for the statements concerning drouth conditions and their effect on wild life. Prof. O. A. Stevens gives a summary on the banding work in North Dakota, showing that a total of 8,749 birds were banded during the first five months of 1934, by ten banders. Mr. T. E. Musselman gives a report of activities, especially along educational lines.

The *Chickadee* for June, 1934, contains as its chief article a list of birds seen during the spring migration at Worcester. Reports of daily field trips and proceedings complete the number of sixteen mimeographed pages.

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Copies	2	4	8	12	16	20	24	28	32	36	40	Cover
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100	1.50	2.25	3.75	5.00	6.25	7.50	8.75	10.00	11.25	12.50	13.75	2.75
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300	2.75	3.50	5.00	6.25	7.50	8.75	10.00	11.25	12.50	13.75	15.00	4.00
400	3.25	4.00	5.50	6.75	8.00	9.25	10.50	11.75	13.00	14.25	15.50	5.00
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Dues for 1935

ANNUAL DUES FOR 1935 ARE NOW PAYABLE

This is the Treasurer's first notice to all members that dues for 1935 are now due and payable to the Treasurer

Mr. W. M. Rosene,
City State Bank,
Ogden, Iowa

You are earnestly requested to remit at your earliest convenience, thus saving postage to the Club and much time to the Treasurer. A receipt will be returned only if requested.

Life Members	**$100.00**
Sustaining Members	**$5.00 Annually**
Active Members	**$2.50 Annually**
Associate Members	**$1.50 Annually**

The Club values the continued support of every member, and every resignation is received with regret.

It is especially desired that members do not neglect payment of their dues at this time. We are now planning a large March number, to contain close to one hundred pages, and to avoid loss we will be forced to limit our mailing list to paid-up members. The extra cost of publication, the extra cost of mailing, will make it necessary for us to check our mailing list carefully. As always, if any member who finds it inconvenient to remit before March will just drop a card to the Editor or Treasurer it will be a pleasure to continue the name on the mailing list.

In behalf of the Officers of the Club the WILSON BULLETIN extends the greetings of the Season to all its readers.